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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	HOWARD, et al.
Serial No.:	09/456,647
Filed:	December 8, 1999
Group No.:	2163
Examiner:	Romain Jeanty
Title:	ELECTRONIC PUBLICATION DISTRIBUTION METHOD AND SYSTEM
Attorney Reference:	35-95-010.1

Assistant Commissioner
for Patents
BOARD OF PATENT APPEALS
AND INTERFERENCES
Washington, D.C. 20231

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Name: Judy Baggett
Date: 7/2/2001

Sir:

TRANSMITTAL FOR APPEAL BRIEF AND FEE

Enclosed with this letter is an Appeal Brief in triplicate, pursuant to 37 CFR §1.192. The Commissioner is hereby authorized to charge the fee of $310.00 (Fee Code 120) under 37 CFR §1.17(c) for filing of the Appeal Brief to Deposit Account No. 05-0765 of Electronic Data Systems Corporation. Further, the Commissioner is authorized to credit any overpayment, or to charge any additional fee required by this paper, to Deposit Account No. 05-0765 of

Electronic Data Systems Corporation. This letter is submitted in duplicate.

Respectfully submitted,
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Enclosures: Appeal Brief, with enclosure (in triplicate)
Post Card

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Sir:

APPEAL BRIEF

A timely Notice of Appeal was previously filed on May 16, 2001, in order to initiate an appeal from the action of the Primary Examiner in finally rejecting Claims 7-8 and 24-26 in the Office Action mailed February 12, 2001. This Appeal Brief is being filed pursuant to the provisions of 37 C.F.R. §1.192. A separate transmittal letter containing an appropriate certificate of mailing serves to transmit this Appeal Brief in triplicate, along with the fee of $310.00 under 37 C.F.R. §1.17(c) for filing of this Appeal Brief.

REAL PARTY IN INTEREST

The present application is a continuation of a parent application which is still pending (U.S. Serial No. 08/673,986 filed July 1, 1996). The assignee of record of both applications is Electronic Data Systems Corporation, by virtue of an Assignment executed by the inventors and recorded in the assignment records of the U.S. Patent and Trademark Office on July 1, 1996 at Reel 8072, Frames 0925-0928.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 7-8 and 24-26 stand finally rejected, pursuant to an Office Action mailed February 12, 2001. Claims 1-6 and Claims 9-23 have been canceled. The claims appealed are Claims 7-8 and 24-26, which are all of the pending claims.

STATUS OF AMENDMENTS

Following issuance of a final rejection mailed on February 12, 2001, a Response was filed on March 2, 2001, but did not seek to amend the present application. Subsequently, an Amendment was filed on April 12, 2001, which sought to amend the application by simply converting dependent Claim 25 into independent form, without making any alteration to the scope of this claim. In an Advisory Action mailed May 7, 2001, the Examiner declined to enter the Amendment dated April 12, 2001, on the ground that it would not place the application in better form for appeal. Consequently, the claims which are on appeal, and which appear in Appendix A of this Brief, represent the form of the claims as of the time

the final rejection was issued on February 12, 2001, without regard to any subsequent proposed amendment.

SUMMARY OF INVENTION

Referring to Figure 1 of the present application, a system 10 includes a publisher's computer 14 which is electronically coupled to a consumer's computer 12, for example through the Internet 16. (Specification page 7, lines 8-13). The publisher's computer 14 can effect delivery to the consumer's computer 12 of an electronic publication. (Page 7, lines 16-20; page 12, lines 28-34). Such a publication may, for example, be an electronic magazine. (Page 2, lines 2-7). The electronic publication may be a standard (uncustomized) publication which is delivered in the same form to a number of different consumers, or may be individually customized for the particular consumer to which it is delivered. (Page 11, lines 14-17). One way of effecting delivery is to transmit the electronic publication by electronic mail (e-mail) to the consumer's electronic mailbox located within the Internet 16, after which the consumer can download the electronic publication from his or her electronic mailbox to the consumer's local computer 12, where the publication is stored so that it can be read later. (Page 3, lines 8-11; page 7, lines 16-22; page 12, lines 28-34). The consumer's computer 12 includes a reading application 20, which is a computer program that can be used to access and read the electronic publication. (Page 7, lines 20-22).

Turning more specifically to the electronic publication, the electronic publication includes at least one advertising item, and at least one content item such as a feature article. (Page 3, lines 17-19). The publisher's computer 14 includes a publication engine 24, which is used to combine content items and advertising items so as to form the

electronic publication. (Page 20, line 21 to page 21, line 2).

When the consumer reads the electronic publication (after it has been delivered), there are various ways in which a given advertising item within the publication may be presented to the consumer. One technique is to link a given advertising item to a specific content item, and then display that particular advertising item whenever the consumer accesses the particular content item. (Page 23, lines 15-17). As one specific example (which is not to be considered limiting), assume the content item is an article about a new car model manufactured by General Motors. An advertisement directed to that particular car model would be displayed when the consumer accessed the article discussing that car model.

In a variation of this technique, a given advertising item can be linked to a particular portion of a given content item, and can be displayed when the consumer accesses that portion of the content item. (Page 23, lines 17-19). As one specific example (which is not to be considered limiting), assume a content item was a feature article discussing several new car models made by respective different manufacturers, one of which was a new model car by General Motors. An advertisement for that particular General Motors' car model would be displayed when the consumer accessed the portion of the article relating to the General Motors' car model, rather than when the consumer accessed other portions of the article discussing cars made by other manufacturers.

Yet another technique for presenting a given advertisement is to display the advertisement at a point in time which is the end of a predetermined time interval that begins when the consumer starts using the electronic publication. (Page 23, lines 1-4). As one specific example

(which is not to be considered limiting), assume the predetermined amount of time is 15 minutes. The given advertising item will be displayed to the consumer 15 minutes after the point in time at which the consumer begins using the electronic publication (for example by launching execution of the reading application 20), without any regard to the particular portions of the electronic publication which the consumer has elected to read during that time interval.

In a variation of this approach, information is maintained about the amount of time which the consumer spends reading the electronic publication during each access thereto, and then this information is used to adjust the predetermined amount of time discussed above. (Page 23, lines 5-14). As one specific example (which is not to be considered limiting), assume the reading application 20 was initially configured to unconditionally display the given advertisement 15 minutes after the reading application 20 was launched, but that the consumer only reads the electronic publication for 10 minutes before terminating execution of the reading application 20. The reading application could then adjust the predetermined amount of time so that it will be 5 minutes when the consumer next uses the publication. The given advertisement would then be unconditionally displayed to the consumer 5 minutes after the next launch of the reading application 20.

ISSUES

The issue presented on appeal is whether Claims 7-8 and 24-26 are anticipated under 35 U.S.C. §102(e) by Reilly U.S. Patent No. 5,740,549.

GROUPING OF CLAIMS

In the final rejection mailed February 12, 2001, Claims 7-8 and 24-26 all stand rejected under 35 U.S.C.

§102(e) as anticipated by Reilly U.S. Patent No. 5,740,549. Pursuant to 37 C.F.R. §1.92(c)(7), Applicants state that the claims of this group do not all stand or fall together, and request that these claims be grouped as follows for purposes of this appeal:

1. Group 1: Claim 8.
2. Group 2: Claim 26.
3. Group 3: Claims 7 and 24. (Claim 7 will be addressed below, and Claim 24 may be deemed to stand or fall with Claim 7 for purposes of this appeal).
4. Group 4: Claim 25.

ARGUMENT

A. LEGAL STANDARD

Each claim discussed hereinafter is rejected on the ground of anticipation under 35 U.S.C. §102. With respect to anticipation under §102, the Court of Appeals for the Federal Circuit has consistently adhered to the basic principle that: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed.Cir. 1987). Similarly, "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed.Cir. 1989). A copy of the *Verdegaal* decision is provided herewith as Appendix B, and a copy of the *Richardson* decision is provided herewith as Appendix C. While Applicants do not intend to rely on the Manual of Patent Examining Procedure (MPEP) as authority here, it is noted that the two foregoing decisions of the Federal

Circuit are each cited in MPEP §2131 as authority for the same principal for which they are cited here. As required by 37 C.F.R. §1.192(c)(8)(iii), this Appeal Brief will show that each rejected claim is not anticipated under §102, in particular by setting forth the specific limitations in each rejected claim which are not described in the prior art relied on for the rejection.

B. REILLY U.S. PATENT NO. 5,740,549

Each claim rejection discussed herein involves an assertion that the claim is completely anticipated under 35 U.S.C. §102 by Reilly U.S. Patent No. 5,740,549 (hereinafter "Reilly"). As a courtesy, a copy of the Reilly patent is provided herewith as Appendix D. The Reilly patent discloses in Figure 1 a system 100 in which an information server computer 104 is coupled to one or more client computers 102, for example through the Internet 119. (Column 3, line 66 through Column 4, line 10). The system 100 transmits advertising items and information content items to the client computers 102 for display. (Column 2, lines 28-34).

Reference numeral 250 in Figure 10 designates several information categories, including "News", "Weather", "Sports", "Local", "Finance", "Health", "Theater" and "Music". Each content item is assigned to one of these categories, and each advertising item is also assigned to at least one of these categories. (Column 2, lines 65-67). As shown diagrammatically in Figure 8, the advertising items assigned to each category are organized into a queue, and the content items assigned to each category are organized into a different queue. (Column 12, lines 6-14). There is no one-to-one relationship between any advertising item and any content item.

Each content item is typically divided into a primary portion and a secondary portion, where the primary portion includes a headline and typically some high-level text, while the secondary portion includes the full text of the item. (Column 4, lines 50-65). In the case of a very short content item, however, the entire item may be contained in the primary portion, such that there is no secondary portion. (Column 13, lines 53-55).

In the context of one of the client computers 102 of Figure 1, Reilly provides two different modes of operation for displaying content items and advertising items, and these two modes will be discussed separately below. The first mode of operation is referred to by Reilly as the "screen saver" mode, and the second mode is referred to by Reilly as the "data viewer" mode.

To discuss the screen saver mode of operation, it must be assumed that the consumer or user is initially using some program which does not use or display any of the content items and advertising items that are present in the client computer 102, such as a standard word-processing program or a standard spreadsheet program. If the computer 102 detects a lack of user input for a specified period of time (such as 5 minutes), for example because the consumer has walked away from the computer 102, then the screen saver mode will automatically launch itself, and take over control of the display screen. (Column 11, lines 40-49).

Figure 6 is a diagrammatic view of a typical screen display during the screen saver mode. In this regard, the system selects one of the categories listed at 250 in Figure 10. With reference to Figure 6, the system displays at 232 in the lower right corner of the screen one of the advertising items assigned to the selected category. Further, three content items assigned to that category are selected,

and the primary portion of each of these content items is displayed on the screen at a respective one of the locations 230a-230c. (Column 9, line 65 through column 10, line 4). The images 230a-230c corresponding to the three content items may be caused to drift around the portion of the display which is not occupied by the advertising item 232. (Column 10, lines 5-9 and 16-18). There is no defined relationship between the advertising item presented at 232 and any of the three content items presented at 230a-230c, because the advertising item is selected from the queue of advertisements for the selected category, and the content items 230a-230c are separately selected from the separate queue of content items for that selected category. (Column 12, lines 48-52).

The advertising item 232 and the three content items 230a-230c selected at the start of the screen saver mode are displayed for a time interval of 30 seconds. (Column 11, lines 53-56). Then, a different category is selected, along with one advertising item from the queue of advertising items for that category, and three content items from the content item queue for that category. Then, the newly-selected advertising item and content items are displayed for the next 30 seconds, in the manner shown in Figure 6. (Column 11, lines 56-63). The selection of a different category, along with advertising and content items within that category, will continue to automatically occur in this manner at 30-second intervals, so long as the computer 102 does not detect any activity by the user.

If the user returns to the computer 102 and presses any key on the keyboard, the screen saver mode will terminate, and the display will revert to whatever was being displayed at the start of the screen saver mode, such as a word-processor screen or a spreadsheet screen. (Column 12, lines 57-61; column 12 line 66 through column 13, line 3). On the other

hand, if the user manipulates a pointing device such as a mouse or a track ball to point to and click on one of the content items 230a-230c, the user can cause the system to switch to the other mode of operation, which as mentioned above is the data viewer mode. (Column 13, lines 3-8).

Figure 10 is a diagrammatic view of a typical screen displayed during the data viewer mode of operation. (Column 13, lines 28-30). As discussed above, the user can enter the data viewer mode from the screen saver mode, by clicking on one of the displayed content items 230a-230c in Figure 6. Alternatively, if the screen saver mode is not operating and the user is actively executing some other type of program (such as a word-processor or spreadsheet), the user can intentionally launch the data viewer mode in the same manner that he or she would launch any other application program, such as a word-processor or spreadsheet. (Column 13, lines 30-36). At the left side of Figure 10, the available categories 250 are displayed, and the user can select one of these categories by clicking on it with the pointing device. In the middle of the screen is a region 248, where the system displays one of the content items from the content item queue for the selected category, including both the primary and secondary portions of that content item. (Column 13, lines 49-53). With respect to what is displayed at 248, the user can move from content item to content item within the content item queue for the selected category, in particular by clicking on forward and backward arrows 254. (Column 13, lines 43-45).

In the upper right portion of the screen is a region 256, which is used to display a photograph (if any) associated with the content item currently displayed at 248. If the content item has more than one photograph associated with it, the user can click on forward and backward buttons 256 in

order to scroll through the photos associated with the currently-displayed content item. (Column 13, lines 45-48).

In the lower right portion of the screen is a region 258, where the system successively displays advertising items from the advertising item queue associated with the currently-selected category. (Column 13, lines 61-64). The display of advertising items at 258 is completely independent of the particular content item which is currently displayed at 248. In this regard, the user can use the forward and backward buttons 254 to scroll through the content items in the selected category, but this will have absolutely no effect on the sequence established for displaying the advertising items at 258. The procedure used to display the advertising items at 258 is as follows.

When the user selects one of the categories 250, the system selects one of the advertising items from the advertising item queue associated with that selected category, and displays that advertising item at 258 for 30 seconds. At the end of the 30-second interval, the system selects the next successive advertising item in the advertising item queue for the selected category, and displays it for 30 seconds. This continues indefinitely, until the user selects a different category 250, in which case the procedure for displaying advertising items is restarted for the newly selected category as of the point in time at which the new category is selected. (Column 13, line 64 through column 14, line 6). That is, an advertising item from the advertising item queue for the newly-selected category will be selected and displayed for 30 seconds, then the next advertising item from that queue will be displayed for 30 seconds, and so forth.

If the user enters the data viewer mode of Figure 10 from the screen saver mode in the manner discussed above, in particular by clicking on one of the content items 230a-230c

in Figure 6, the Reilly system apparently effects automatic selection of the category 250 which was currently selected in the screen saver mode, and automatically displays at 248 the content item from that category which the user selected by clicking on one of the items 230a-230c. In contrast, Reilly does not appear to include a clear disclosure of what happens when the user intentionally launches the data viewer mode of Figure 10 at a point in time when the system is not in the screen saver mode. In particular, it is not clear whether the system avoids displaying any content item and any advertising item at 248 and 258 until after the user manually selects a category 250, or whether the system automatically selects a default or arbitrary category 250 and then displays at 248 and 258 an arbitrarily-selected content item and an arbitrarily-selected advertising item from that selected category.

Each client computer 102 in Reilly has some capability to maintain certain statistical information, such as the number of times that each advertising item has been displayed, the number of times that each news item has been displayed, an indication of which advertisements the user has interacted with, the amount of time the user spent viewing each content item, and the amount of time the screen saver mode was active for each category. (Column 5, line 61 through column 6, line 10; column 9, lines 18-24). Each client computer 102 in Reilly is configured to periodically feed this statistical information back to the information server computer 104. (Column 5, lines 63-65).

B. GROUP 1 - CLAIM 8

Independent Claim 8 is directed to a method for advertising in an electronic publication which includes a plurality of content items and at least one advertising item. Claim 8 includes a recitation of "presenting the advertising

item to the user of the electronic publication in response to the access of a specific content item". One specific hypothetical example of this feature is the above-mentioned situation where the content item is a feature article on a particular new car model made by General Motors, and the advertising item is an advertisement by General Motors which promotes that particular car model. General Motors would pay for the benefit of having the advertisement displayed when a consumer is reading the feature article on that particular General Motors' car model. (This hypothetical situation is offered purely as an illustrative example, and is not intended to suggest any limitation to the scope of any claim).

Independent Claim 8 stands rejected under 35 U.S.C. §102 as completely anticipated by Reilly. However, Applicants respectfully traverse this ground of rejection. As evident from the foregoing discussion of the Reilly patent, Reilly does not provide the capability to link any given advertising item to any particular content item. Instead, each of the categories shown at 250 in Figure 10 of Reilly has associated with it (1) a queue of content items and (2) a separate queue of advertising items, as shown diagrammatically in Figure 8 of Reilly. At any given point in time, only one of the categories is selected. The Reilly system then displays one or more content items from the queue of content items for that selected category, and one of the advertising items from the queue of advertising items for that selected category. But there is no linking or synchronization between the display of any content item from the content item queue and any advertising item from the advertising item queue.

Claim 8 recites permitting a user to "access" the electronic publication, and recites that a particular advertising item is presented "in response to the access of a specific content item". In Reilly, the user can only access a

particular content item in the data viewer mode shown in Figure 10. (If the user attempts to access any particular content item in the screen saver mode, the system will respond by automatically entering the data viewer mode, as explained earlier). In the data viewer mode shown in Figure 10 of Reilly, one of the categories 250 is selected. At the point in time when this category is selected, the system begins successively displaying in 30-second time slots the advertising items from the queue of advertising items for that particular category, in a predetermined sequence.

There is nothing which the user can do to change this predetermined sequence of advertising items (other than to select a different category having a different sequence of advertising items). Within the selected category, the user can use the buttons 254 to scroll forward and backward through the various content items, and this occurs completely independently of the predetermined sequence in which the advertising items are being displayed at 258. Assuming hypothetically that one of the content items in the selected category is a feature article about a General Motors' car, and assuming that the user scrolls to and accesses that content item, Reilly has no capability to respond to the user's assess of that particular content item by forcing the display at 258 of a particular advertising item, such as an advertisement for the General Motors' car discussed in the content item. Even assuming that the queue of advertising items included an advertisement for that General Motors vehicle, Reilly would display that advertisement solely as a function of the predetermined sequence for displaying advertising items, without any regard to whether the user has or has not elected to access any particular content item in the queue of content items for that category.

Summarizing, Reilly does not teach the specific capability to use a consumer's assess of a specific content item as a trigger for presenting a particular advertising item, and thus completely fails to disclose one of the distinctive elements expressly recited in the method of Claim 8, which is "presenting the advertising item to the user of the electronic publication in response to the access of a specific content item". With reference to the language quoted above from the *Verdegaal* and *Richardson* decisions, there is a failure to satisfy the requirement that "each and every element as set forth in the claim is found" in Reilly, and Reilly also fails to meet the requirement that "the identical invention must be shown in as complete detail as is contained in the ... claim". It is therefore respectfully submitted that Reilly fails to anticipate Claim 8 under 35 U.S.C. §102, and it is respectfully requested that the Board reverse the Examiner's rejection of Claim 8 under §102.

D. GROUP 2 - CLAIM 26

Claim 26 depends from Claim 8 and thus includes the limitations of Claim 8, and Claim 26 is therefore believed to be allowable for the same reasons discussed above with respect to Claim 8. In addition, Claim 26 recites a further refinement of the subject matter of Claim 8. In particular, Claim 26 includes a recitation of "presenting the advertising item to the user in response to the access by the user of a predetermined part of the specific content item". As a specific hypothetical example, reference is made to the above-discussed situation in which a content item is a feature article that successively discusses several vehicles made by different automotive manufacturers, where one portion of this article is a discussion of a particular car model made by General Motors. When the user is accessing other portions of

the feature article that deal with vehicles made by other manufacturers, the advertisement for the General Motors vehicle would not necessarily be displayed. But if the user accessed the portion of the article which addressed the General Motors vehicle, such access would trigger an unconditional display of the specific advertising item for that General Motors vehicle. (This discussion of a hypothetical situation involving an article and advertisement relating to General Motors is provided purely by way of illustrative example, and it is not intended to impart any limitation to the scope of any claim).

Claim 26 stands rejected under 35 U.S.C. §102 as completely anticipated by Reilly. Applicants respectfully traverse this ground of rejection. As evident from the discussion of Reilly presented earlier, Reilly does disclose that a given content item may be divided into a primary portion and a secondary portion (lines 60-65 in Column 4 of Reilly). However, as discussed above in association with Claim 8, Reilly does not teach that any particular content item can be linked to any particular advertising item, or that any particular advertising item can be linked to any particular content item. Consequently, Reilly necessarily fails to disclose that there can be any type of link between any advertising item and a portion of any content item. Therefore, Reilly clearly fails to teach the additional distinctive feature which is recited in Claim 26, and which involves "presenting the advertising item to the user in response to the access by the user of a predetermined part of the specific content item". Reilly thus fails to disclose "each and every element as set forth in the claim", and fails to satisfy the requirement that the "identical invention must be shown in as complete detail as contained in the ... claim", which in turn means that Reilly fails to satisfy the standard

set forth in the previously-cited *Verdegaal* and *Richardson* decisions. Reilly thus does not anticipate Claim 26 under §102. Applicants therefore respectfully request that the Board reverse the Examiner's rejection of Claim 26 under §102.

E. GROUP 3 - CLAIMS 7 and 24

Claim 7 is an independent claim, and Claim 24 depends from Claim 7. The following discussion will focus on Claim 7, and dependent Claim 24 will stand or fall with Claim 7 for purposes of this appeal.

Independent Claim 7 is directed to a method of advertising in an electronic publication which includes at least one content item and at least one advertising item. Claim 7 recites "presenting the advertising item to the user of the electronic publication after passage of a predetermined amount of time during which the electronic publication has been in use". Claim 7 thus recites that a particular advertising item is unconditionally presented at a very specific point in time, which is at the end of a precisely defined time interval that begins when the user starts using the electronic publication. As one specific hypothetical example, assume that the predetermined time interval is 15 minutes, and begins when the user launches execution of a program which provides access to the electronic publication. The user can "surf" through the content items in the electronic publication in any manner which he or she chooses, but the given advertisement will be unconditionally presented to the user exactly 15 minutes after the user begins accessing the electronic publication. (This specific example is provided solely for illustrative purposes, and is not intended to impart any limitation to the scope of any claim).

Claim 7 stands rejected under 35 U.S.C. §102 as completely anticipated by Reilly. Applicants respectfully

traverse this ground of rejection. With reference to the earlier discussion of the Reilly patent, Reilly defines several categories (250 in Figure 10), which are each associated with a respective queue listing the advertising items associated with that category. In Reilly, a given advertising item will be eligible for possible display only if the user selects a category to which that advertising item is assigned. If the user never selects a category to which the advertising item is assigned, then the advertising item in question will not be displayed. Thus, Reilly does not provide any way to unconditionally guarantee that a particular advertisement will be presented to the user, because there is no way to guarantee that the user will select a category to which that advertising item is assigned.

Moreover, even assuming that the user does happen to select a category to which the advertising item is assigned, the timing of the presentation of the advertising item will be synchronized to the point in time at which the user selected that category, rather than the earlier point in time at which the user began using the electronic publication. Moreover, for any given category, there are factors which determine the sequence in which the advertising items for that category will be displayed, and these factors are not structured to allow a given advertising item to be unconditionally displayed at a specific point after the user began using the electronic publication. Given the factors actually used by Reilly, a given advertising item may be the first advertising item displayed following entry to the associated category, or may be the fifteenth advertising item displayed after entry to that category.

Thus, for several reasons discussed above, it is respectfully submitted that Reilly does not teach the specific distinctive feature expressly set forth in Applicants' Claim 7

of "presenting the advertising item to the user of the electronic publication after passage of a predetermined amount of time during which the electronic publication has been in use". Therefore, and with reference to the above-discussed *Verdegaal* and *Richardson* decisions, Reilly does not anticipate Claim 7 because Reilly fails to disclose "each and every element as set forth in the claim", and fails to meet the requirement that the "identical invention must be shown as in complete detail as is contained in the ... claim". Applicants therefore respectfully request that the Board reverse the Examiner's rejection of Claim 7 under §102.

F. GROUP 4 - CLAIM 25

Claim 25 depends from Claim 7, and thus inherently includes the distinctive feature discussed above in association with Claim 7. Claim 25 is therefore believed to be allowable for the same reasons discussed above with respect to Claim 7. In addition, Claim 25 sets forth a further refinement of the subject matter of Claim 7, in the recitation of "maintaining information about the amount of time which the user spends reading the electronic publication during each access thereto, and setting the predetermined amount of time as function of such information". As one specific hypothetical example, assume that a given advertisement was configured to be unconditionally displayed at the end of a time interval of 15 minutes from the point in time at which a user commenced use of the electronic publication. Assume also that the user began using the electronic publication, but then terminated access after only 10 minutes, or in other words before the expiration of the 15-minute time interval and thus before the given advertisement could be unconditionally displayed. The system could detect this and adjust the time interval from 15 minutes to a lower value such as 5 minutes.

Then, the next time that the user accessed the electronic publication, the given advertisement would be unconditionally displayed at the end of the time interval of 5 minutes following commencement of use of the electronic publication by the user. (This hypothetical example is provided purely by way of illustration, and is not intended to impart any limitation to the scope of any claim).

Claim 25 stands rejected under 35 U.S.C. §102 as completely anticipated by Reilly. With reference to an earlier discussion herein of the Reilly patent, Reilly discloses various time intervals, such as a time interval of 5 minutes (column 11, line 46), and various time intervals of 30 seconds (column 11, lines 53-63; column 13, line 61 to column 14 line 6). Reilly also teaches that certain statistical information can be maintained about how the user interacts with the electronic publication. (Column 5, line 61 to column 6 line 10; column 9, lines 18-24). However, Reilly does not teach or suggest that the Reilly system has the capability to automatically and dynamically vary any of the disclosed time intervals based on any criteria, much less based on a criteria which is specifically a function of the statistical information collected by the Reilly system regarding the user's use of the electronic publication.

Reilly thus fails to teach an element of the invention recited in Claim 25, which is "setting the predetermined amount of time as a function of such information", where the information relates to "the amount of time which the user spends reading the electronic publication during each access thereto". Consequently, and with reference to the above-discussed *Verdegaal* and *Richardson* decisions, Reilly fails to anticipate Claim 7 under §102 because Reilly fails to disclose "each and every element as set forth in the claim", and fails to meet the requirement that "the identical

invention must be shown in as complete detail as contained in the ... claim". Applicants therefore request that the Board reverse the Examiner's rejection of Claim 25 for anticipation under §102.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejection of each Claims 7-8 and 24-26 is erroneous, and reversal of the rejection of each of these claims is respectfully requested.

Respectfully submitted,
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Enclosures:
Appendix A - Claims on Appeal
Appendix B - Copy of *Verdegaal* Decision
Appendix C - Copy of *Richardson* Decision
Appendix D - Copy of Reilly U.S. Patent No. 5,740,549

APPENDIX A

APPENDIX A - CLAIMS ON APPEAL

7. A method for advertising in an electronic publication, comprising:

creating an electronic publication which includes at least one content item and at least one advertising item;

permitting a user to access the electronic publication; and

presenting the advertising item to the user of the electronic publication after passage of a predetermined amount of time during which the electronic publication has been in use.

24. The method of Claim 7, wherein the electronic publication includes a plurality of the advertising items, and wherein said presenting step is carried out by successively presenting the advertising items to the user of the electronic publication at respective predetermined points in time which are spaced from each other by the predetermined amount of time.

25. The method of Claim 7, including the step of maintaining information about the amount of time which the user spends reading the electronic publication during each access thereto, and setting the predetermined amount of time as a function of such information.

8. A method for customizing advertising in an electronic publication, comprising:

creating an electronic publication which includes a plurality of content items and at least one advertising item;

permitting a user to access the electronic publication; and

presenting the advertising item to the user of the electronic publication in response to the access of a specific content item.

26. The method of Claim 8, wherein said presenting step is carried out by presenting the advertising item to the user in response to the access by the user of a predetermined part of the specific content item.

justice to the realities of the situation. As stated by the Supreme Court in *Church of the Holy Trinity v. United States*, 143 U.S. 457, 459 (1892), it is a "familiar rule that a thing may be within the letter of the statute, but not within its spirit nor within the intention of its makers."

Texas State Comm'n for the Blind v. United States, 796 F.2d 400, 406 (Fed. Cir. 1986).

To determine whether the applicability of the CDA to the pleaded contracts is within the intention of Congress, we must look to the purpose of the Act and its legislative history.

The CDA is an implementation of recommendations made by the Commission on Government Procurement, created by Congress in 1969, to

> promote economy, efficiency, and effectiveness in the procurement of goods, services and facilities by and for the executive branch of the Federal Government by—
>
> (1) establishing policies, procedures, and practices which will require the Government to acquire goods, services, and facilities of the requisite quality and within the time needed at the lowest reasonable cost, utilizing competitive bidding to the maximum extent practicable. . . .

Pub. L. No. 91-129, §1, 83 Stat. 269, as amended by Pub. L. No. 92-47, 85 Stat. 102. As stated in the Senate Report on the CDA

> Both [the economy of our society and the success of many major Government programs] can be affected by the existence of competition and quality contractors — or by the lack thereof. The way potential contractors view the disputes-resolving system influences how, whether, and at what prices they compete for Government contract business.

S. Rep. No. 1118, 95th Cong., 2d Sess. (1978), *reprinted in* 1978 U.S. Code Cong. & Admin. News 5235, 5238.

Such policy considerations relating to cost and competition have no application, however, to the pleaded contracts. The September 23, 1983 document merely defined the way in which NCI scientists were to deal with the LAV virus samples supplied without charge by Pasteur in the context of a collaborative research effort. In this respect the pleaded contacts resemble the implied contract at issue in *Coastal*, wherein this court stated that an implied contract to treat a bid honestly and fairly merely defined the way the Government must deal with bids in the process of selecting a contractor, and that it was not a contract for the procurement of goods or services under the CDA.

A review of associated regulations reveals an emphasis on a buyer-seller relationship and an expenditure of government funds. For example, in 41 C.F.R. § 1-1.208 (1983), "contract" is defined as

> a binding legal relation basically obligating the seller to furnish personal property or nonpersonal services (including construction) and the buyer to pay therefor. It includes all types of commitments which obligate the Government to an expenditure of funds. . . .

Similarly, 41 C.F.R. § 1.209 (1983) defines "procurement" as

> the acquisition . . . from non-Federal sources, of personal property and nonpersonal services (including construction) by such means as purchasing, renting, leasing (including real property), contracting or bartering, but not by seizure, condemnation, donation, or requisition.

Here there was no "buyer" or "seller" and no obligation on the part of the Government to expend funds. The Claims Court noted that "a cash 'payment' is not the applicable test" of whether a contract comes within the ambit of the CDA. *See Coffey v. United States On Behalf Of The Commodity Credit Corp.*, 626 F.Supp. 1246, 1250 (D. Kan. 1986). We are persuaded, however, that the transaction here was closer to being donative in nature than it was to the contracts for procurement of property or services which Congress contemplated including within the scope of the Contract Disputes Act.

We are also not convinced that the transaction was a "barter" contract as found by the Claims Court to support its holding that the CDA was applicable. The September 23, 1983 document merely conditioned acceptance of the LAV virus samples on a promise to refrain from sharing them without permission from Pasteur. Neither that promise nor the Government's implied promise to share the results of future experiments with Pasteur can be considered "specific property susceptible of valuation," as would be required for barter. Black's Law Dictionary 1200 (5th ed. 1979).

Finally, application of complex, burdensome, and inevitably time-consuming procurement regulations to the type of scientific collaboration here involved would "not do justice to the realities of the situation." *Texas State Comm'n For The Blind*, 796 F.2d at 406. The exchange of information and perishable biological products among scientists engaged in collaborative research relating to deadly diseases such as AIDS should not be required to await compliance with procurement regulations such as those requiring a documented determination by a contracting officer that the contractor (here, Pasteur) is "responsible," 41 C.F.R. §§ 1-1.12, 3-1.12 (1983), or a written justification for contracting on a noncompetitive basis, 41 C.F.R. § 3-3.5301 (1983). Moreover, the numerous form clauses required by federal procurement regulations would have no applicability to this type of collaborative research effort. *See, e.g.*, 41 C.F.R. §§ 1-1.381-7, 1-7 (1983). Confirmatory of this is the fact that HHS itself has used a form similar to Pasteur's September 23, 1983 agreement when sending cell lines to other laboratories.

[1] For the foregoing reasons, we are persuaded that the primary function of the pleaded contracts was facilitation of the transfer of research materials among scientists engaged in a collaborative research effort, not procurement of property or services, and that they, therefore, do not fit within the scope of the Contract Disputes Act. Accordingly, we reverse the judgment of the Claims Court and remand the case for consideration of whether there is a valid and enforceable contract, and, if so, whether it has been breached.

REVERSED AND REMANDED

Court of Appeals, Federal Circuit

Verdegaal Brothers Inc. v. Union Oil Company of California

No. 86-1258

Decided March 12, 1987

PATENTS

1. Patentability/Validity — Anticipation — Prior art (§115.0703)

Federal district court erred in denying patent infringement defendant's motion for judgment n.o.v., in view of evidence demonstrating that claims for making urea-sulfuric acid fertilizer, including claims that reaction be conducted in "heat sink" of recycled fertilizer to prevent high temperature buildup, were anticipated by prior art patent that specifically detailed process for making such urea-sulfuric acid products and that explicitly taught that base or "heel" of recycled fertilizer can be used to make more of product, even if patentee of prior art did not recognize that heel functioned as heat sink, since heat sink property was inherently possessed by heel.

Particular patents — Fertilizers

4,310,343, Verdegaal and Verdegaal, Process for Making Liquid Fertilizer, holding of validity and infringement reversed.

Appeal from District Court for the Eastern District of California, Coyle, J.

Action by Verdegaal Brothers Inc., William Verdegaal, and George Verdegaal, against Union Oil Company of California, and Brea Agricultural Services Inc., for patent infringement. From decision denying defendants' motion for judgment notwithstanding the verdict, defendants appeal. Reversed.

Andrew J. Belansky of Christie, Parker & Hale (David A. Dillard, with him on the brief), all of Pasadena, Calif., for appellants.

John P. Sutton of Limbach, Limbach & Sutton (Michael E. Dergosits, with him on the brief), all of San Francisco, Calif., for appellees.

Before Markey, Chief Judge, and Davis and Nies, Circuit Judges.

Nies, Circuit Judge.

Union Oil Company of California and Brea Agricultural Services, Inc. (collectively Union Oil) appeal from a judgment of the United States District Court for the Eastern District of California, No. CV-F-83-68 REC, entered on a jury verdict which declared U.S. Patent No. 4,310,343 ('343), owned by Verdegaal Brothers, Inc., "valid" and claims 1, 2, and 4 thereof infringed by Union Oil. Union Oil's motion for judgment notwithstanding the verdict (JNOV) was denied. We reverse.

I
BACKGROUND
The General Technology

The patent in suit relates to a process for making certain known urea-sulfuric acid liquid fertilizer products. These products are made by reacting water, urea (a nitrogen-containing chemical), and sulfuric acid (a sulfur-containing chemical) in particular proportions. The nomenclature commonly used by the fertilizer industry refers to these fertilizer products numerically according to the percentages by weight of four fertilizer constituents in the following order: nitrogen, phosphorous, potassium, and sulfur. Thus, for example, a fertilizer containing 28% nitrogen, no phosphorous or potassium, and 9% sulfur is expressed numerically as 28-0-0-9.

The Process of the '343 Patent

The process disclosed in the '343 patent involves the chemical reaction between urea

and sulfuric acid, which is referred to as an exothermic reaction because it gives off heat. To prevent high temperature buildup, the reaction is conducted in the presence of a nonreactive, nutritive heat sink which will absorb the heat of reaction. Specifically, a previously-made batch of liquid fertilizer — known as a "heel" — can serve as the heat sink to which more reactants are added. Claims 1 and 2 are representative:

1. In a process for making a concentrated liquid fertilizer by reacting sulfuric acid and urea, to form an end product, the improvement comprising:
a. providing a non-reactive, nutritive heat sink, capable of dissipating the heat of urea and sulfuric acid, in an amount at least 5% of the end product,
b. adding water to the heat sink in an amount not greater than 15% of the end product,
c. adding urea to the mixture in an amount of at least 50% of the total weight of the end product,
d. adding concentrated sulfuric acid in an amount equal to at least 10% of the total weight of the end product.

2. The process of claim 1 wherein the heat sink is recycled liquid fertilizer.

Procedural History

Verdegaal brought suit against Union Oil in the United States District Court for the Eastern District of California charging that certain processes employed by Union Oil for making liquid fertilizer products infringed all claims of its '343 patent. Union Oil defended on the grounds of noninfringement and patent invalidity under 35 U.S.C. §§102, 103. The action was tried before a jury which returned a verdict consisting of answers to five questions. Pertinent here are its answers that the '343 patent was "valid" over the prior art, and that certain of Union Oil's processes infringed claims 1, 2, and 4 of the patent. None were found to infringe claims 3 or 5. Based on the jury's verdict, the district court entered judgment in favor of Verdegaal.

Having unsuccessfully moved for a directed verdict under Fed. R. Civ. P. 50(a), Union Oil timely filed a motion under Rule 50(b) for JNOV seeking a judgment that the claims of the '343 patent were invalid under sections 102 and 103. The district court denied the motion without opinion.

II
ISSUE PRESENTED

Did the district court err in denying Union Oil's motion for JNOV with respect to the validity of claims 1, 2, and 4 of the '343 patent?

III
Standard of Review

When considering a motion for JNOV a district court must: (1) consider all of the evidence; (2) in a light most favorable to the non-moving party; (3) drawing all reasonable inferences favorable to that party; (4) without determining credibility of the witnesses; and (5) without substituting its choice for that of the jury's in deciding between conflicting elements of the evidence. *Railroad Dynamics, Inc. v. A. Stucki Co.*, 727 F.2d 1506, 1512–13, 220 USPQ 929, 936 (Fed. Cir.), *cert. denied*, 469 U.S. 871 [224 USPQ 520] (1984); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1546, 220 USPQ 193, 197 (Fed. Cir. 1983). A district court should grant a motion for JNOV only when it is convinced upon the record before the jury that reasonable persons could not have reached a verdict for the nonmoving party. *Railroad Dynamics*, 727 F.2d at 1513, 220 USPQ at 936; *Connell*, 722 F.2d at 1546, 220 USPQ at 197.

To reverse the district court's denial of the motion for JNOV, Union Oil must convince us that either the jury's factual findings are not supported by substantial evidence, or, if they are, that those findings cannot support the legal conclusions which necessarily were drawn by the jury in forming its verdict. *See Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir.), *cert. denied*, 469 U.S. 857 [225 USPQ 792] (1984). *Railroad Dynamics*, 727 F.2d at 1512, 220 USPQ at 936. Substantial evidence is more than just a mere scintilla; it is such relevant evidence from the record taken as a whole as a reasonable mind might accept as adequate to support the finding under review. *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938); *Perkin-Elmer*, 732 F.2d at 893, 221 USPQ at 673; *SSIH Equip. S.A. v. U.S. Int'l Trade Comm'n*, 718 F.2d 365, 371 n.10, 218 USPQ 678, 684 n.10 (Fed. Cir. 1983). A trial court's denial of a motion for JNOV must stand unless the evidence is of such quality and weight that reasonable and fair-minded persons in the exercise of impartial judgment could not reasonably return the jury's verdict. *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758, 221 USPQ 473, 477 (Fed. Cir. 1984).

Our precedent holds that the presumption of validity afforded a U.S. patent by 35 U.S.C. § 282 requires that the party challenging validity prove the facts establishing invalidity by clear and convincing evidence. *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360, 220 USPQ 763, 770 (Fed. Cir.), *cert. denied*, 469 U.S. 821 [224 USPQ 520] (1984). Thus, the precise question to be resolved in this case is whether Union Oil's evidence is so clear and convincing that reasonable jurors could only conclude that the claims in issue were invalid. *See Perkin-Elmer*, 732 F.2d at 893, 221 USPQ at 673; *Railroad Dynamics*, 727 F.2d at 1511, 220 USPQ at 935.

Anticipation

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715, 223 USPQ 1264, 1270 (Fed. Cir. 1984); *Connell*, 722 F.2d at 1548, 220 USPQ at 198; *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771, 218 USPQ 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 [224 USPQ 520] (1984). Union Oil asserts that the subject claims of the '343 patent are anticipated under 35 U.S.C. § 102(e)[1] by the teachings found in the original application for U.S. Patent No. 4,315,783 to Stoller, which the jury was instructed was prior art.

From the jury's verdict of patent validity, we must presume that the jury concluded that Union Oil failed to prove by clear and convincing evidence that claims 1, 2, and 4 were anticipated by the Stoller patent. *See Perkin-Elmer*, 732 F.2d at 893, 221 USPQ at 673; *Railroad Dynamics*, 727 F.2d at 1516, 220 USPQ at 939. Under the instructions of this case, this conclusion could have been reached only if the jury found that the Stoller patent did not disclose each and every element of the claimed inventions. Having reviewed the evidence, we conclude that substantial evidence does not support the jury's verdict, and, therefore, Union Oil's motion for JNOV on the grounds that the claims were anticipated should have been granted.

The Stoller patent discloses processes for making both urea-phosphoric acid and urea-sulfuric acid fertilizers. Example 8 of Stoller specifically details a process for making 30–0–0–10 urea-sulfuric acid products. There is no dispute that Example 8 meets elements b, c, and d of claim 1, specifically the steps of adding water in an amount not greater than 15% of the product, urea in an amount of at least 50% of the product, and concentrated sulfuric acid in an amount of at least 10% of the product. Verdegaal disputes that Stoller teaches element a, the step of claim 1 of "providing a non-reactive, nutritive heat sink." As set forth in claim 2, the heat sink is recycled fertilizer.[2]

The Stoller specification, beginning at column 7, line 30, discloses:

> Once a batch of liquid product has been made, it can be used as a base for further manufacture. This is done by placing the liquid in a stirred vessel of appropriate size, adding urea in sufficient quantity to double the size of the finished batch, adding any water required for the formulation, and slowly adding the sulfuric acid while stirring. Leaving a heel of liquid in the vessel permits further manufacture to be conducted in a stirred fluid mass.

This portion of the Stoller specification explicitly teaches that urea and sulfuric acid can be added to recycled fertilizer, i.e., a heel or base of previously-made product. Dr. Young, Union Oil's expert, so testified. Verdegaal presented no evidence to the contrary.

Verdegaal first argues that Stoller does not anticipate because in Stoller's method sulfuric acid is added *slowly*, whereas the claimed process allows for rapid addition. However, there is no limitation in the subject claims with respect to the rate at which sulfuric acid is added, and, therefore, it is inappropriate for Verdegaal to rely on that distinction. *See SSIH*, 718 F.2d at 378, 218 USPQ at 689. It must be assumed that slow addition would not change the claimed process in any respect including the function of the recycled material as a heat sink.

Verdegaal next argues that the testimony of Union Oil's experts with respect to what

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[1] Section 102(e) provides:
A person shall be entitled to a patent unless—
....
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent
....

[2] Claim 4 is written in terms of approximate percentages of all reactants by weight of the end product. No argument is made that the process of claim 4 would result in a fertilizer product any different from that disclosed by Example 8 of Stoller.

Stoller teaches could well have been discounted by the jury for bias. Discarding that testimony does not eliminate the reference itself as evidence or its uncontradicted disclosure that a base of recycled fertilizer in a process may be used to make more of the product.

[1] Verdegaal raises several variations of an argument, all of which focus on the failure of Stoller to explicitly identify the heel in his process as a "heat sink." In essence, Verdegaal maintains that because Stoller did not recognize the "inventive concept" that the heel functioned as a heat sink, Stoller's process cannot anticipate. This argument is wrong as a matter of fact and law. Verdegaal's own expert, Dr. Bahme, admitted that Stoller discussed the problem of high temperature caused by the exothermic reaction, and that the heel could function as a heat sink.[3] In any event, Union Oil's burden of proof was limited to establishing that Stoller disclosed the same process. It did not have the additional burden of proving that Stoller recognized the heat sink capabilities of using a heel. Even assuming Stoller did not recognize that the heel of his process functioned as a heat sink, that property was inherently possessed by the heel in his disclosed process, and, thus, his process anticipates the claimed invention. *See In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (CCPA 1971). The pertinent issues are whether Stoller discloses the process of adding urea and sulfuric acid to a previously-made batch of product, and whether that base would in fact act as a heat sink. On the entirety of the record, these issues could only be resolved in the affirmative.

On appeal Verdegaal improperly attempts to attack the status of the Stoller patent as prior art, stating in its brief:

> Verdegaal also introduced evidence at trial that the Stoller patent is not prior art under 35 U.S.C. §§ 102(e)/103. Professor Chisum testified that the Stoller patent, in his opinion, was not prior art.... This conclusion finds support in *In re Wertheim*, 646 F.2d 527 [209 USPQ 554] (CCPA 1981), and 1 Chisum on Patents §3.07[3].

Appellee Brief at 27 (record cite omitted). Seldom have we encountered such blatant distortion of the record. A question about the status of the Stoller disclosure as prior art did arise at trial. Union Oil asserted that, even though the Stoller patent issued after the '343 patent, Stoller was prior art under section 102(e) as of its filing date which was well before the filing date of Verdegaal's application. Professor Chisum never testified that the Stoller patent was *not* prior art, but rather, stated that *he did not know* whether it was prior art. An excerpt from the pertinent testimony leaves no doubt on this point:

> Q. (Mr. Sutton): And do you know whether the Stoller patent is prior art to the application of the Verdegaal patent?
> A. (Prof. Chisum): I don't know that it is, no.

We find it even more incredible that Verdegaal would attempt to raise an issue with respect to the status of the Stoller patent given that the case was submitted to the jury with the instruction that the original Stoller patent application was prior art.[4] Verdegaal made no objection to that instruction below, and in its appeal briefs, the instruction is cavalierly ignored.

In sum, Verdegaal is precluded from arguing that the Stoller patent should not be considered prior art. *See* Fed. R. Civ. P. 51; *Weinar v. Rollform Inc.*, 744 F.2d 797, 808, 223 USPQ 369, 375 (Fed. Cir. 1984), *cert. denied*, 105 S.Ct. 1844 (1985); *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*, 739 F.2d 604, 615, 222 USPQ 654, 662 (Fed. Cir.), *cert. denied*, 469 U.S. 1038 (1984).[5]

After considering the record taken as a whole, we are convinced that Union Oil established anticipation of claims 1, 2, and 4 by clear and convincing evidence and that no reasonable juror could find otherwise. Consequently, the jury's verdict on validity is unsupported by substantial evidence and cannot stand. Thus, the district court's denial of Union Oil's motion for JNOV must be reversed.

Conclusion

Because the issues discussed above are dispositive of this case, we do not find it necessary to reach the other issues raised by Union Oil.[6] In accordance with this opinion, we reverse the portion of the judgment entered on the jury verdict upholding claims 1, 2, and 4 of the '343 patent as valid under section 102(e) and infringed.

REVERSED

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[3] There is no dispute that the percentage of heel described in Stoller meets the percentage of heat sink required by the claims.

[4] The jury instruction read:

> Stoller filed two patent applications — an original application on October 30th, 1978, and a second on February 7th, 1980. Under the patent laws, the claims of the 343 patent are invalid if you find that the original application (Exhibit BL) anticipates the process claimed in the 343 patent.

[5] Union Oil also argues that Verdegaal's counsel misled the jury by its closing rebuttal argument:

> [B]ut I think it's important to keep in mind that [Stoller] couldn't have been a prior patent because it issued a month after the Verdegaal patent had issued.

We disapprove of Verdegaal's tactic which would form the basis for a grant of a motion for a new trial but for our conclusion that outright reversal of the ruling on the motion for JNOV is in order.

[6] It should not be inferred that all of these issues were properly before us. Union Oil appears to assume that on appeal it may dispute the resolution of any *issue* which is denominated an "issue of law" even though it was not raised in its motion for JNOV. This is incorrect. *See Railroad Dynamics*, 727 F.2d at 1511, 220 USPQ at 934.

District Court, E.D. New York

Propper Manufacturing Co. v. Surgicot Inc.

No. CV 85-1363

Decided November 26, 1986

PATENTS

1. Infringement — Construction of claims — Doctrine of equivalents (§120.0703)

Accused disposable test pack for hospital sterilizer does not infringe claims at issue, even though same result is obtained, since pack does not function in substantially same manner as claimed test pack, nor is accused test pack's outer, non-porous, gas-impermeable, unitary plastic laminated sheet equivalent of claimed porous outer shell sheets.

Particular patents — Sterilizer Tests

4,486,387, Augurt, Disposable Prevacuum Steam Sterilizer Test Device, not infringed.

Action by Propper Manufacturing Co. Inc., against Surgicot Inc., for patent infringement. Judgment for defendant.

Daniel Ebenstein, and Amster, Rothstein & Ebenstein, both of New York, N.Y., for plaintiff.

Gerald J. Flintoft, Michael I. Chakansky, Susan Lee, and Pennie & Edmonds, all of New York, N.Y., for defendant.

Wexler, District Judge.

FINDINGS OF FACT

AND CONCLUSIONS OF LAW

1. This is an action by Propper Manufacturing Co., Inc. ("Propper") for infringement of Propper's U.S. Patent No. 4,486,387 issued December 4, 1984 in the name of Thomas A. Augurt, a Propper employee. Propper, a New York Corporation, having an office and principal place of business at 36-04 Skillman Avenue, Long Island City, manufactures and sells medical, surgical and related hospital products. Defendant, Surgicot, Inc. ("Surgicot"), is a subsidiary of Squibb, Inc., with a principal place of business at 55 Kennedy Drive, Smithtown, New York. Surgicot manufactures and sells sterilization indicators and sterility assurance materials for use by hospitals.

2. The Surgicot product charged with patent infringement in this case was developed and is manufactured for Surgicot, on a private label basis, by the ATI Division of Warner Lambert Corp. ("ATI"), located in Los Angeles, California.

3. Propper charges Surgicot with infringement of Claims 1, 3 and 5 of the Augurt patent, which relates to a disposable device known as a "test pack" used to test hospital sterilizers to be sure they are functioning correctly. Propper's infringement charge is based upon Surgicot's sale of its "STAR Pack" disposable test pack, made for Surgicot by ATI. Surgicot contends, however, that the Augurt patent is invalid on the grounds that the Augurt invention would have been "obvious" to one of ordinary skill in the art, 35 U.S.C. § 103 (1982), and, in the alternative, that the STAR Pack product does not infringe the Augurt patent. This action was tried by the Court on August 4-7, 1986.

4. While the technical background of the Augurt patent is not significantly in dispute, some technical background is required to understand the issues in this case. The pre-

APPENDIX C

that term's ordinary significance as a laudatory designation. See: *Webster's Third New International Dictionary* (1976) which defines "imperial," inter alia, as "of superior or unusual size or excellence." As such, we find the term to be a relatively weak mark and we agree with applicant that the scope of protection afforded such a mark is considerably narrower than that afforded a more arbitrary designation.[3] Compare: In re Eldorado Motor Corp. 6 USPQ2d 1732 (TTAB 1988) and cases cited therein. We think the weakness of the marks involved herein is a significant factor and serves, in this case, to "tip the scales" in favor of a finding of no likelihood of confusion.

Decision: The refusal of registration is reversed and the mark will be published for opposition in due course.

[3]Our conclusion as to the weakness of the term "IMPERIAL" in the vehicular industry is based, or course, solely on the limited record before us in this ex parte proceeding. In the context of an inter partes proceeding with a different record presented, we could very well reach a contrary determination on the relative strength or weakness of the term.

Court of Appeals, Federal Circuit

Richardson v. Suzuki Motor Co. Ltd.

Nos. 87-1497, -1498, -1502, 88-1083, -1084

Decided February 16, 1989

PATENTS

1. Patentability/Validity — In general (§115.01)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Jury trials (§410.42)

Jury may decide questions of anticipation and obviousness, either as separate special verdicts or en route to verdict on validity, which is also proper question for determination by jury, since there is no reason to distinguish submission of legal questions to jury in patent cases from such jury submissions routinely made in other types of cases.

PATENTS

2. Patentability/Validity — Anticipation — Prior art (§115.0703)

Jury's "advisory" verdict that patentee's rising rate motorcycle suspension was not anticipated, and federal district court's independent holding of validity, are affirmed since reasonable jury could have concluded that claim in issue was not anticipated, in view of totality of evidence including prior art consisting of two prior motorcycle suspension patents and two designs for race car suspensions, and since analysis of district court's decision, based on same prior art, shows no clear error.

3. Patentability/Validity — Obviousness — Evidence of (115.0906)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Jury trials (§410.42)

Federal district court's conclusion, after jury entered verdict of non-obviousness, that obviousness of plaintiff's invention had not been proven and that claim in issue is not invalid, is affirmed despite court's erroneous belief that obviousness issue could only be presented to jury for "advisory" verdict, since review of record shows that there was substantial evidence on which reasonable jurors could conclude that claim had not been proved obvious, and therefore no reversible error occurred.

PATENTS

4. Infringement — Doctrine of equivalents — In general (§120.0701)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Jury trials (§410.42)

Federal district court's judgment of infringement, entered on jury verdict of infringement, is affirmed despite jury's special verdicts that defendant's motorcycle rear suspension linkages are not "equivalent" to patented system, since jury was given incorrect definition of "equivalents" and special verdict interrogatories were prejudicial in that they focused on differences between patented and accused devices without mention of similarities, and since, given correct instructions, reasonable jury could not have found that accused systems, which contain every element of relevant claims but one, are not equivalent to claimed invention.

REMEDIES

5. Monetary — Damages — Patents — Reasonable royalty (§510.0507.03)

Jury's award of 50 cents for each infringing motorcycle sold by defendant as damages for infringement of plaintiff's motorcycle suspension system is vacated, since federal district court improperly instructed jury that infringement was "relatively minor," and since, absent such prejudicial instruction, there was no reasonable basis on which jury could have found that royalty awarded was reasonable.

PATENTS

6. Title — Construction of license agreement (§150.07)

TRADEMARKS AND UNFAIR TRADE PRACTICES

Trade secrets — In general (§400.01)

Federal district court incorrectly instructed jury that only "valid trade secrets" were subject to restraints in contract between plaintiff and defendant since, in view of defendant's agreement not to use or disclose "technical information, know-how, inventions, use data, and design specifications" that it received from plaintiff, jury instructions limited scope of protected information beyond that set forth in contract.

7. Trade secrets — Elements of trade secret (§400.03)

Trade secrets — Disclosure and misappropriation (§400.07)

Federal district court erred by instructing jury that information defendant could have developed on its own was not subject to trade secret protection, that "slavish" copying is necessary for trade secret misappropriation, and that jury could decide whether plaintiff could have both valid patent and legal protection for later-developed information on patented invention, since information capable of independent development or discovery from other sources is not excluded from trade secret protection, misappropriator cannot escape liability by showing modification of, or improvement upon, protected information, and legal status of information and improvements made after patent application has been filed is independent of presence or absence of patent application or ensuing patent.

8. Trade secrets — Elements of trade secret (§400.03)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Jury trials (§410.42)

Federal district court abused its discretion in granting defendant's motion for new trial on issue of whether certain information constituted trade secrets, since court may not vacate jury verdict unless verdict is contrary to clear weight of evidence, is based upon false evidence, or would cause miscarriage of justice, and since there was substantial evidence before jury that information in question was not publicly known, that defendant agreed to receive and preserve it in confidence, and that information fully satisfies statutory and jurisprudential requirements for protectible trade secrets.

REMEDIES

9.Monetary — Damages — In general (§510.0501)

Jury's assessment of $104,000 in damages for defendant's use of certain information obtained from plaintiff is affirmed, since there was substantial evidence presented at trial that would enable jury to determine sum awarded.

10. Non-monetary and injunctive — Equitable relief — In general (§505.0701)

Non-monetary and injunctive — Equitable relief — Permanent injunctions (§505.0709)

Federal district court erred in denying plaintiff's motion for injunction after entering final judgment in plaintiff's favor on issue of patent infringement, since irreparable harm is presumed when clear showing of patent validity and infringement is made and therefore injunction should issue if no sound reason exists for denying it, and patentee should not be denied its right to exclude others from using invention once infringement is established.

PATENTS

11. Patent misuse — Improper procurement and enforcement (§140.03)

TRADEMARKS AND UNFAIR TRADE PRACTICES

Trade secrets — Disclosure and misappropriation (§400.07)

REMEDIES

Monetary — Damages — Unfair trade practices (§510.0508)

Federal district court improperly vacated jury verdicts and ordered new trial on fraud issues after jury found for plaintiff on those issues and entered award of punitive damages, since, although court may have believed that defendant did not commit fraud, record shows that there was evidence on which reasonable jury could support verdicts, and since jury's award of punitive damages, which may be assessed if fraud has been expressly found, was not so disproportionate to damages sustained as to be result of passion or prejudice.

PATENTS

12. Patentability/Validity — Inventorship (§115.13)

Title — Assignments (§150.03)

REMEDIES

Non-monetary and injunctive — Equitable relief — In general (§505.0701)

Federal district court erred in denying motion for assignment of defendant's patent to plaintiff after jury returned special verdict finding that invention asserted in patent was first disclosed to defendant by plaintiff, since separate special verdict in which jury found that plaintiff was not "real" inventor of invention asserted in disputed patent, and on which court based its denial of motion, reflects jury's understanding of co-inventor status of third party and contributions of others in development of alternate embodiment of invention and therefore does not diminish force of verdict naming plaintiff as person who first disclosed invention to defendant, since neither question of whether plaintiff is sole or joint inventor, which is not before court, nor presence in claims of further modification beyond that disclosed by plaintiff to defendant, negates imposition of equitable remedy of assignment of patent, and since, based on jury verdict, plaintiff is entitled to ownership of patent as against defendant.

13. Monetary — Damages — Prejudgment interest (§510.0511)

Federal district court erred in denying plaintiff's request for prejudgment interest on damage awards for patent infringement and misappropriation of trade secrets, since allowance of such interest is required if, as in instant case, there is no showing of exceptional circumstances or reason why damages for trade secret misappropriation should be treated differently from those for patent infringement.

JUDICIAL PRACTICE AND PROCEDURE

14. Procedure — Jury trials (§410.42)

REMEDIES

Monetary — Damages — Patents — Increased damages (§510.0507.07)

Federal district court erred in refusing to submit question of willful patent infringement to jury, since evidence adduced at trial concerning fraud, misappropriation of trade secrets, absence of any opinion by U.S. counsel concerning validity of plaintiff's patent at commencement of defendant's infringing activity, and defendant's bad faith, when viewed in light most favorable to plaintiff, does not permit finding of no willful infringement as only reasonable conclusion.

15. Monetary — Attorney's fees; costs — Patents (§510.0905)

Monetary — Attorney's fees; costs — Unfair trade practices (§510.0907)

Federal district court's award of only one-third of costs to plaintiff who prevailed on major substantive issues in suit exceeded court's authority, since plaintiff is entitled to statutory costs incurred before trial court.

Particular patents — General and mechanical — Vehicle suspension systems

3,907,332, Richardson, suspension system for two-wheeled vehicles, valid and infringed.

4,457,393, Tamaki and Suzuki, suspension device for motorcycles, assignment to Donald G. Richardson ordered.

Appeal from the U.S. District Court for the Central District of California, Gray, J.

Action by Donald G. Richardson against Suzuki Motor Co. Ltd., U.S. Suzuki Motor Corp., Kawasaki Heavy Industries Ltd., Kawasaki Motors Corp., Yamaha Motor Co. Ltd., Yamaha Motor Corp. U.S.A., Kayaba Industry Co. Ltd. and Kayaba Industry Co., for patent infringement, breach of contract, fraud and misappropriation of trade secrets. From judgment holding plaintiff's patent not invalid and infringed, awarding damages for infringement and use of plaintiff's information by defendant, and from grant of defendant's motion for new trial on issues of trade secrets, fraud, and damages awarded for fraud, Richardson and Suzuki defendants cross-appeal. Affirmed in part, reversed in part, vacated in part, and remanded.

Theresa A. Middlebrook, of Wagner & Middlebrook and Robert D. Driscoll, of Driscoll & Tomich (John E. Wagner, with them on brief), Glendale, Calif., for plaintiff/appellant.

John A. Fogarty, of Kenyon & Kenyon, New York, N.Y. (Richard S. Gresalfi and Dawn M. DiStefano, New York, N.Y., and Richard S. Rockwell, Tustin, Calif., with him on brief; Duffern H. Helsing and Halina F. Osinski, Santa Ana, Calif., of counsel), for defendants/cross-appellants.

Before Skelton, senior circuit judge, and Smith and Newman, circuit judges.

Newman, J.

This appeal and cross-appeal are from the judgment of the United States District Court for the Central District of California, and involve issues of patent validity, infringement, breach of contract, fraud, misappropriation of trade secrets, and several related

issues.[1] We affirm in part, reverse in part, vacate in part, and remand.

The Invention

The invention that led to this litigation is a motorcycle rear-wheel suspension system that smooths the ride over rough terrain, of interest particularly in off-road motorcycle riding. The roughness of the ride is due to bumps and dips in the terrain, transmitted from the wheels to the frame. An optimum rear-wheel suspension will maintain tire contact with the ground despite deflection by irregularities, will avoid "bottoming out" (an unsafe rising of the suspension), yet will achieve a smooth ride without reduction in safety. In 1974 even the best available suspensions did not maintain adequate tire contact with the ground in conjunction with attempts to eliminate bottoming out.

In mid-1974 Donald G. Richardson, a young mechanic in California, devised a solution to the problem, a modified suspension system that he installed in his own motocross motorcycle. Richardson replaced the conventional two-spring shock absorber suspension system with a system consisting of a single shock absorber plus a linkage consisting of a bell crank and connecting rod. This linkage generated a "rising rate"[2] — a characteristic critical to the issue — and produced a far superior ride, even as it eliminated the dangerous bottoming out. Richardson testified about his first ride, at a hilly construction site near his house, as "utopia. I mean it was incredible"; over hard bumps it was "uncanny because it was so smooth"; "[t]he rear end didn't kick up. It just didn't bottom out and stayed down"; an "unbelievable feeling".

On November 25, 1974 Richardson filed a United States patent application on his invention, and on September 23, 1975 the application issued as United States Patent No. 3,907,322 (hereinafter the '332 or Richardson patent). Patent claim 9, which incorporates claim 1, is the only claim in suit. Claims 1 and 9 follow:

1. A suspension for two wheeled vehicles comprising:

a frame for the vehicle comprising a generally closed shape including upper and lower portions

and a swing arm pivotally connected to the lower portion of said frame;

said swing arm comprising a pair of arms rotatably supporting a wheel about a horizontal axis generally at the end of said swing arm;

the pivotal mounting of said arm to said frame being about a generally horizontal axis whereby said wheel is both rotatable about its own horizontal axis and deflectable in a generally vertical direction about the axis of said swing arm;

spring means having a first end pivotally secured to said frame;

a link member including an intermediate point pivotally mounted on said frame about an axis, parallel to the axis of said swing arm at a point spaced therefrom;

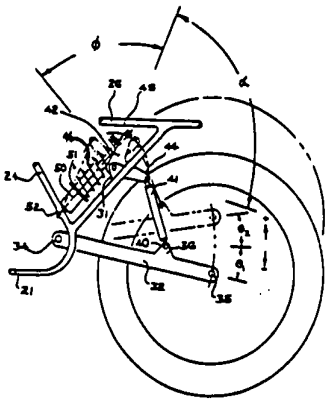
pivotal connection means between said link member and the second end of said spring;

a bar pivotally connected at one end to said swing arm and at the opposite end to said link member at a position spaced from said spring connection;

said spring, bar, swing arm and link connected whereby deflection of said swing arm displaces said bar and rotates said link member to compress said spring.

9. The combination in accordance with claim 1 wherein said assembly provides a rising spring rate as a function of deflection of said swing arm.

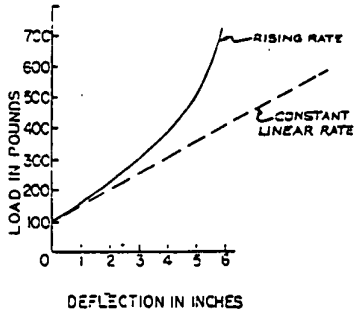
Figure 2 of the '332 patent specification is illustrative:



[1] *Richardson v. Suzuki Motors Co. and Suzuki U.S. Motors Corp.*, Nos. CV 80-2589-WPG and CV 82-3826-WPG (C.D. Cal. June 29, 1987 and July 13, 1987).

[2] "Rising rate" was described by witnesses as follows: "as the suspension travels upward, the resistance to upward travel will increase"; and it "gets stiffer as the wheel moves up toward the vehicle or moves upward in the frame."

As the rear wheel is deflected upward by bumps in the terrain, the swing arm (32) that is pivotally connected at (34) to the motorcycle frame (21) rotates upward, pushing the compression rod (41) into the bell crank (42) that is pivotally secured (31) at its intermediate point to the motorcycle frame. The bell crank rotates on its pivot (31) and compresses, downward against the frame, a spring (46) that is pivotally connected at one end (45) to the bell crank, and at its other end (52) to the motorcycle frame. The interaction of these interconnected parts increases the force on the spring, increasing the rate of resistance to deflection of the wheel with increased movement of the wheel. This varying resistance is the "rising spring rate" of claim 9, and is illustrated in Figure 5 of the '332 patent:



The Contact with Suzuki

In October 1978 Richardson entered into a one year Option and License Agreement with the Suzuki Motor Co., Ltd. of Japan ("Suzuki").

The Agreement gave Suzuki the exclusive right to test and evaluate Richardson's suspension, and the exclusive option to acquire an exclusive license to the '332 patent and Richardson's "proprietary technical information, know-how, inventions, and use data", collectively defined in the Agreement as the "Licensed Rights."

The Agreement required Richardson to disclose to Suzuki all technical information, know-how, inventions, use data and design specifications for his suspension, that he possessed or that he acquired during the option period. Suzuki agreed to preserve all such information in confidence, and not to use any of it "for any purpose other than to evaluate for commercial feasibility of manufacture and marketing during the Option Period." Suzuki agreed that this obligation of confidence continued if Suzuki did not exercise the option. Excepted from the confidentiality obligation was all information previously known to Suzuki or at any time generally known to the public.

The agreement required Richardson to make prototypes of his suspension system for Suzuki's evaluation. Richardson installed his suspension in Suzuki's sample 1978 and 1979 model production motorcycles, and disclosed to Suzuki the technical information and know-how that he possessed, including improvements and other information that he developed during this period. He met frequently with Suzuki engineers and other Suzuki personnel in the United States and in Japan to communicate this information and generally to improve performance and to facilitate testing and evaluation.

There was testimony at trial of initial incredulity on the part of Suzuki engineers concerning Richardson's suspension, of Suzuki's past failures in designing a suspension with the desired characteristics, and of Suzuki's favorable response to the performance of Richardson's suspension. The evidence included internal Suzuki documents made while Suzuki was testing Richardson's suspension, stating that it would "take a long time", perhaps three years, for Suzuki to develop a satisfactory suspension.

In early 1979 Richardson and a colleague Cazort conceived an improvement in the linkage-generated rising rate suspension, which they called the "Alternate Shock Mount" and which they disclosed to Suzuki, accompanied by drawings and blueprints made by Cazort. The difference from the structure described in the '332 patent is that in the Alternate Shock Mount the lower end of the spring is pivotally secured to the swing arm which is pivotally secured to the frame, instead of being pivotally secured directly to the frame, resulting in increased strength.

In May 1979 Richardson's first prototype for Suzuki, wherein Richardson, aided by Cazort, installed his suspension in a Suzuki 1978 production model, was successfully tested in Japan. Testimony at trial included statements attributed to Suzuki's test riders that they could see the bumps but not feel

them, and other commentary evidencing a highly favorable reaction to Richardson's suspension.

It was a stipulated fact that after these tests Suzuki made the decision to place the linkage-generated rising rate suspension system into production, and started development work for this purpose.

On October 16, 1979 Suzuki filed a patent application in Japan. The corresponding United States patent, filed on October 8, 1980, claims the Alternate Shock Mount suspension as disclosed by Richardson, and also claims a modification made by Suzuki called the "criss-cross". Suzuki named two of its engineers, Hirohide Tamaki and Manabu Suzuki, as the inventors.

Suzuki twice requested and was granted one-month extensions of its Option and License Agreement with Richardson. In December 1979 Suzuki informed Richardson that it would not exercise the option.

In March 1980 Suzuki began competitive racing in the United States of Suzuki motorcycles using the Alternate Shock Mount suspension, which Suzuki named the "Full Floater". Suzuki met with marked racing success, the Full Floater receiving favorable publicity and high acclaim from the public, Extensive advertising was directed to the Full Floater rising rate suspension. The product achieved widespread commercial success.

Suzuki denied any obligation to Richardson.

Litigation

Richardson brought suit against Suzuki (Japan) and the U.S. Suzuki Motor Corporation in California state court, and was granted a preliminary injunction restraining the Suzuki companies from breach of the Option and License Agreement and requiring them to comply with the confidentiality terms thereof. At Suzuki's request the state court declined to enforce the injunction after U.S. Suzuki sued Richardson in federal court, seeking a declaratory judgment of invalidity and non-infringement of Richardson's '332 patent.

In 1982 Richardson filed a patent infringement action against the Suzuki companies and others. (Only the Suzuki companies remain as parties.) Richardson reasserted the state claims of breach of contract, breach of implied covenant of good faith and fair dealing, misappropriation of trade secrets, and fraud, and among other relief requested assignment of the patents obtained by Suzuki on the Alternate Shock Mount. Suzuki counterclaimed for fraud and breach of contact by Richardson, based on asserted invalidity of the '332 patent.

The federal actions were consolidated and tried to a jury. After forty-seven days of a two-part trial the jury gave special verdicts on issues of liability and damages. The district court entered final judgment under Fed.R.Civ.P. 54(b) on the jury verdicts that the '332 patent was not invalid and was infringed by Suzuki, that nine of Richardson's eleven asserted trade secrets were not trade secrets, and that Richardson was not entitled to assignment of the Tamaki/Suzuki patents on the Alternate Shock Mount. The court also entered final judgment on the jury verdicts of damages for patent infringement and for Suzuki's use of certain of Richardson's information that the jury found were not trade secrets. The court denied prejudgment interest and attorney fees, and refused to grant an injunction.

The district court denied most of the parties' post-trial motions, but granted Suzuki's motion for a new trial on three issues that the jury had decided in favor of Richardson, upholding two of the eleven asserted trade secrets, finding fraud on the part of Suzuki, and assessing damages for fraud. The district court then entered a supplemental final judgment for immediate appeal of the issues that the court intended to retry, and certified three specific questions on these and related issues.

I

Validity of Richardson's '332 Patent

Suzuki asserts on appeal the invalidity of claim 9 on grounds of anticipation (35 U.S.C. §102) and obviousness (35 U.S.C. §103).[1] The district court, stating that questions of patent validity must be decided by the court, told the jury that its verdicts on this issue were advisory. Nevertheless the court duly entered the jury verdicts, including the answer YES to the question: "Under the facts and law as you believe that you understand them, do you find Claim 9 of the Richardson Patent to be valid?" The court entertained, and denied, post-trial motions for judgment n.o.v. and for a new trial on the question of validity. The court also independently decided the question, upholding validity of the '332 patent.

The record provided to us doesn't show the origin of this discredited procedure of advisory verdicts, or whether either party objected. In *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 895 n.5, 221 USPQ 669, 674 n.5 (Fed. Cir.), *cert. denied*, 469 U.S. 857 [225 USPQ 792] (1984), we observed that:

> The view suggested in *Sarkisian [v. Winn-Proof Corp.*, 688 F.2d 647, 651, (9th Cir. 1982), *cert. denied*, 460 U.S. 1052 (1983)], that a jury verdict on nonobviousness is at best advisory, would make charades of motions for directed verdict or JNOV under Fed.R.Civ.P. 50 in patent cases. These motions apply only to *binding* jury verdicts. . . .
>
> Moreover, use of an advisory jury is limited to actions not triable of right by a jury.

(emphasis in original, citations omitted). In a similar circumstance wherein the trial court and the jury independently decided the same jury question (in that case the question of willfulness of infringement) we remarked that "[a]ll fact findings of a jury are non-advisory, unless made in an area expressly removed from jury verdict." *Shiley, Inc. v. Bentley Laboratories, Inc.*, 794 F.2d 1561, 1568, 230 USPQ 112, 115 (Fed. Cir. 1986), *cert. denied*, 479 U.S. 1087 (1987).

[1] It is established that the jury may decide the questions of anticipation and obviousness, either as separate special verdicts or en route to a verdict on the question of validity, which may also be decided by the jury. *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1547, 220 USPQ 193, 197 (Fed. Cir. 1983):

> No warrant appears for distinguishing the submission of legal questions to a jury in patent cases from such submissions routinely made in other types of cases. So long as the Seventh Amendment stands, the right to a jury trial should not be rationed, nor should particular issues in particular types of cases be treated differently from similar issues in other types of cases.

See also, e.g., Vieau v. Japax, Inc., 823 F.2d 1510, 1515, 3 USPQ2d 1094, 1098 (Fed. Cir. 1987); *Verdegaal Brothers Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1052 (Fed. Cir.), *cert. denied*, 108 S.Ct. 95 (1987); *Data Line Corp. v. Micro Technologies, Inc.*, 813 F.2d 1196, 1200, 1 USPQ2d 2052, 2054 (Fed. Cir. 1987); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1571, 1 USPQ2d 1081, 1085 (Fed. Cir. 1986); *DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425–27, 231 USPQ 276, 279–80 (Fed. Cir. 1986); *Mainland Industries, Inc. v. Standal's Patents Ltd.*, 799 F.2d 746, 747–48, 230 USPQ 772, 773 (Fed. Cir. 1986); *Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1560, 224 USPQ 259, 263 (Fed. Cir. 1984); *Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1454–55, 223 USPQ 1161, 1165–66 (Fed. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985); *Weinar v. Rollform Inc.*, 744 F.2d 797, 805, 223 USPQ 369, 372 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985); *Perkin-Elmer Corp.*, 732 F.2d at 894–95, 221 USPQ at 674; *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758, 221 USPQ 473, 477 (Fed. Cir. 1984); *Railroad Dynamics, Inc. v. A. Stucki Company*, 727 F.2d 1506, 1512–13, 220 USPQ 929, 935 (Fed. Cir.), *cert. denied*, 469 U.S. 871 [224 USPQ 520] (1984); *White v. Jeffrey Mining Mach. Co.*, 723 F.2d 1553, 1558, 220 USPQ 703, 705 (Fed. Cir. 1983) ("Submission of such a question of law [obviousness] to a jury, accompanied by appropriate instructions, is proper."), *cert. denied*, 469 U.S. 825 (1984). *See generally*, H.T. Markey in *On Simplifying Patent Trials*, 116 F.R.D. 369, 370 (1987) ("There is neither reason nor authority for employing in a patent trial procedures and practices different from those employed in any other civil trial. Indeed, reason and authority mandate the contrary.")

Although the district court and the jury reached the same result, the standards by which appellate courts review the judgment differ, depending on whether it arose from a jury or a bench trial. *District of Columbia v. Pace*, 320 U.S. 698, 701 (1944) ("findings of fact by an equity court and the verdict of a jury have from time immemorial been subject to different rules of finality"). When the judgment arises from a jury verdict, the reviewing court applies the reasonable jury/substantial evidence standard: a standard that gives greater deference to the judgment simply because appellate review is more limited, compared with review of a trial judge's decision. *Id.* at 702. As summarized in *Lavender v. Kurn*, 327 U.S. 645, 653 (1946), "the appellate court's function is exhausted when that evidentiary basis [of the jury's verdict] becomes apparent, it being immaterial that the court might draw a contrary inference or feel that another conclusion is more reasonable." *See generally* M.B. Louis, *Allocating Adjudicative Decision Making Authority Between the Trial and Appellate Levels: A Unified View of the Scope of Review, The Judge/Jury Question, and Procedural Discretion*, 64 N.C. L.Rev. 993 (1986).

The parties do not take a position on the district court's procedure, but appear to recognize that the issue of validity was properly for jury determination, for neither party refers to the district court's explanation of its

[1] The additional aspects of adequacy of disclosure (35 U.S.C. §112) and unenforceability for inequitable conduct, both decided in favor of Richardson, have not been appealed.

independent determination of the question of obviousness.

In the interest of reaching an end to this protracted litigation, we have reviewed the judgment on the terms on which it reaches us. We have determined first whether Suzuki met its burden of showing on appeal that no reasonable jury could have reached the verdict of "valid" on the evidence before it. *Allen Organ Co. v. Kimball Int'l, Inc.*, 839 F.2d 1556, 1566, 5 USPQ2d 1769, 1777 (Fed. Cir.), *cert. denied*, 109 S.Ct. 132 (1988); *DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425, 231 USPQ 276, 278 (Fed. Cir. 1986); *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 618–19, 225 USPQ 634, 636 (Fed. Cir.), *cert. dismissed*, 474 U.S. 976 (1985). Then, on the premise that the parties may have waived their right to a jury trial on this question by failure to object to the district court's procedure, we have considered whether the district court's independent judgment of validity may be sustained, on the standards applicable thereto. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1566–68, 1 USPQ2d 1593, 1595–97 (Fed. Cir.) (obviousness determination in bench trial reviewed as a question of law based on underlying facts), *cert. denied*, 107 S.Ct. 2187 (1987).

The court correctly instructed the jury that invalidity must be proved by clear and convincing evidence, referring to the presumption of validity. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 674; *Jamesbury Corp. v. Litton Industrial Products, Inc.*, 756 F.2d 1556, 1559, 225 USPQ 253, 255 (Fed. Cir. 1985); *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1360, 220 USPQ 763, 771 (Fed. Cir.), *cert. denied*, 469 U.S. 821 [224 USPQ 520] (1984).

A. Anticipation

The district court correctly instructed the jury that an invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 673; *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 771–72, 218 USPQ 781, 789 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 [224 USPQ 520] (1984). The identical invention must be shown in as complete detail as is contained in the patent claim. *Jamesbury Corp.*, 756 F.2d at 1560, 225 USPQ at 256; *Connell*, 722 F.2d at 1548, 220 USPQ at 198.

As prior art, Suzuki relied on the motorcycle suspensions described in certain patents to Downs and Warner, and on the race car wheel suspensions described for Tyrrell and McLaren race cars in two Road and Track magazine articles. Witnesses explained to the jury the similarities and differences between the invention of the '332 patent and each prior art reference. For example, the Downs suspension has a spring element that is rigidly attached to the motorcycle frame and does not pivot as is required by claim 9 of the '332 patent. The Warner reference shows a suspension having a bell crank that is pivotally mounted to the motorcycle frame but not at an intermediate point, whereas Richardson requires a mid-point pivot of the bell crank to the frame. Neither Downs nor Warner describes a rising rate. The magazine articles describe a four wheel racing car suspension system having a linkage-generated variable rising rate incorporating a bell crank, but instead of the swing arm of Richardson's motorcycle suspension, the race car systems use an A-shaped arm mounted to the side of an upright wheel; and the bell crank and linkage in the race car system is located beside the wheel, rather than in front of the wheel as in Richardson's motorcycle system.

Witnesses testified that rising rate in motorcycles had previously been obtained only by progressively wound springs and gas operated shock absorbers. Suzuki argued that rising rate is inherent in the Downs and Warner motorcycle suspensions and expressly described for race cars in the magazine articles, and also that rising rate is merely a statement of function, and thus should not be a basis for distinction from the prior art.

The jury found that Downs did not "disclose each and every element of the Richardson Claims 1 and 9 or their equivalent". For the Warner reference, the jury could not reach a unanimous verdict on this same question, but answered NO to the question whether "the respective elements of Warner function in substantially the same way as the corresponding elements in Richardson to produce substantially the same results". The jury found that the race car suspensions did "disclose each and every element of the Richardson Claims 1 and 9 or their equivalent", but did not reach a unanimous verdict as to whether they "function in substantially the same way as the corresponding elements in Richardson to produce substantially the same results."

The jury had erroneously been instructed that anticipation may be shown by equivalents, a legal theory that is pertinent to obviousness under Section 103, not to anticipation under Section 102. *Lewmar Marine, Inc. v. Barient, Inc.*, 827 F.2d 744, 747–48, 3 USPQ2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 108 S.Ct. 702 (1988); *Connell*, 722 F.2d at 1548, 220 USPQ at 198. The jury requested a definition of "equivalent" during its deliberations, and was given the Webster's dictionary definition "corresponding or virtually identical, especially in effect or function." This narrow definition, which does not accord with that of *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 [85 USPQ 328, 330] (1950), may have minimized the legal error in the instructions. In any event, the erroneous inclusion of equivalents in the anticipation inquiry favored Suzuki. The jury nonetheless answered YES to the special verdict: "Under the facts and law as you believe that you understand them, do you find Claim 9 of the Richardson Patent to be valid?"

[2] On the totality of the evidence and in light of the jury instructions and answers, we conclude that a reasonable jury could have found that the patent was not invalid on grounds of anticipation. *Perkin-Elmer Corp.*, 732 F.2d at 894, 221 USPQ at 673–74 (review of presumed jury finding that anticipation not proved, based on jury verdict of validity).

Reviewing the analysis and decision of the district court, based on the same prior art, we discern no clear error in the court's conclusion that claim 9 was not invalid.

We affirm that claim 9 was not proved invalid on the ground of anticipation.

B. Obviousness

The issue of obviousness was vigorously litigated, Suzuki relying on the same Downs and Warner patents and magazine articles. The record shows that there was extensive testimony concerning the differences between Richardson's suspension and the prior art. Suzuki argued at trial, and repeats on this appeal, that these differences are trivial mechanical expedients.

The jury, among its special verdicts on the *Graham* factors, found that a person of ordinary skill in the pertinent art could be any of: (1) a motorcycle mechanic without formal technical education, (2) a person with experience in working on suspension systems for racing automobiles, but without formal technical training, (3) suspension system instructors, (4) professional motorcycle riders, and (5) someone possessing above-average mechanical skills. Suzuki argues that such a person is of generally high mechanical skill, and to such a person Richardson's rising rate motorcycle suspension would have been an obvious "adaption" of the race car suspension systems, which "suggests itself quite plainly, since Downs and Warner incorporate bell cranks in their respective suspensions."

The jury was unable to reach a unanimous verdict on the question of whether a person of the level of skill found by the jury, presented with the problem and being familiar with all the prior art including these four specific references, but unaware of Richardson's device, would be "led to do" what Richardson did. In response to the ultimate question, as we have observed, the jury reached the unanimous verdict that "Under the facts and law as you believe that you understand them", claim 9 was "valid". The district court entered judgment on the jury verdicts, independently held the patent valid, and denied Suzuki's motions for judgment n.o.v. and for a new trial on the issue of validity.

The question for the jury was whether the challenger met the burden of proving invalidity by clear and convincing evidence; and the question on review is whether reasonable jurors could have concluded that the challenger failed to meet that burden. *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1571, 1 USPQ2d 1081, 1085 (Fed. Cir. 1986); *Perkin-Elmer Corp.*, 732 F.2d at 894–95, 221 USPQ at 674. The jury's lack of unanimity on certain special verdicts can reasonably be taken to mean, as the district court held, that invalidity had not been proved by clear and convincing evidence.

[3] Our review shows that there was substantial evidence on which reasonable jurors could have concluded that claim 9 had not been proved invalid for obviousness, and thus reached the verdict of "valid". Although the district court erred in its belief that obviousness could only be presented to the jury for an advisory verdict, we may view the court's agreement with the jury verdict of validity as supporting the court's denial of Suzuki's post-trial motions for judgment n.o.v. and for a new trial. *Perkin-Elmer Corp.*, 732 F.2d at 895, 221 USPQ at 674–75. However it is viewed procedurally, no reversible error has been shown in the court's conclusion that obviousness had not been proved and that claim 9 was not invalid.

The judgment of validity is affirmed.

II
Infringement

Richardson bore the burden of proving infringement by a preponderance of the evi-

dence. The district court correctly stated that the jury was the finder of the fact of infringement.

The jury rendered special verdicts as to the Suzuki motorcycles before it, Model M having the Richardson/Cazort Alternate Shock Mount and Model C having the "criss-cross" connection added by Suzuki, as follows:

9(a). Do defendant Suzuki's motorcycles of the Model M type . . . infringe Claim 9 of the plaintiff's patent?

Answer: YES, WITH THE RISING RATE

9(b). Do defendant Suzuki's motorcycles of the Model C type . . . infringe Claim 9 of the plaintiff's patent?

Answer: YES, WITH THE RISING RATE

In subparts 9(a)(2) and 9(b)(2) of the special verdict the jury answered YES to the question whether the Suzuki motorcycles produce substantially the same rising rate as taught in Richardson's patent.

The principal question on appeal is the meaning and effect of the jury answers to subparts (1) of the special verdict, which were directed "in particular" to the Alternate Shock Mount and the criss-cross modifications:

9(a)(1). In particular, is the defendant's linkage equivalent to the plaintiff's, bearing in mind that the bottom of the spring in the former is affixed to the swing arm rather than to the frame?

Answer: NO

9(b)(1). In particular, is the defendant's linkage equivalent to the plaintiff's, in light of the "criss-cross" of the connecting rods and the bell crank in the defendant's model, as well as the spring attachment to the swing arm, as compared with the plaintiff's Claim 9?

Answer: NO

The district court entered judgment of infringement in favor of Richardson and denied post-trial motions by both sides, including a motion by Richardson to reopen the record in order to present evidence on the doctrine of equivalents. The district court stated that the jury verdicts mean that "infringement is limited to 'rising rate' " and that the Suzuki and Richardson linkages are not equivalent.

Suzuki argues that special verdicts 9(a)(1) and 9(b)(1) require judgment of non-infringement; or, as a minimum, that these verdicts are inconsistent with the verdicts of infringement in 9(a) and 9(b), such that a new trial is required of the entire issue. Richardson states that the verdicts can be understood, when viewed in light of the jury instructions, in a way that supports the judgments of infringement. Suzuki did not request a new trial on the basis of inconsistent verdicts at the time the judgments were entered, while Richardson moved, unsuccessfully, to amend or delete verdicts 9(a)(1) and 9(b)(1). Each party asserts that any inconsistency should be resolved in its favor.

The Ninth Circuit, in accordance with the general rule, requires trial and appellate courts to seek reconciliation of apparently inconsistent verdicts:

> When faced with a claim that verdicts are inconsistent, the court must search for a reasonable way to read the verdicts as expressing a coherent view of the case, and must exhaust this effort before it is free to disregard the jury's verdict and remand the case for a new trial.

Toner v. Lederle Laboratories, 828 F.2d 510, 512 (9th Cir. 1987), *cert. denied*, 108 S.Ct. 1122 (1988) (citing *Gallick v. Baltimore & Ohio R.R.*, 372 U.S. 108, 119 (1963), also citing *Atlantic & Gulf Stevedores, Inc. v. Ellerman Lines, Ltd.*, 369 U.S. 355, 364 (1962) and *Blanton v. Mobil Oil Corp.*, 721 F.2d 1207, 1213, (9th Cir. 1983), *cert. denied*, 471 U.S. 1007 (1985)). *See also Allen Organ Co.*, 839 F.2d at 1563, 5 USPQ2d at 1775 (the appellate court must make every effort to harmonize the jury's answers).

The district court did not find the special verdicts inconsistent, apparently in the belief that the jury limited infringement to the rising rate provision of claim 9 but not the other claim clauses. This accords with the court's statement to the jury that the infringement was "minor" because it was limited to the rising rate. This interpretation pleased neither party. If we have correctly understood it, it is incorrect as a matter of law.

"We are bound to find the special verdicts consistent if we can do so under a fair reading of them." *Toner*, 828 F.2d at 512. A fair reading of the special verdicts results from simply applying the rule that "[t]he consistency of the jury verdicts must be considered in light of the judge's instructions to the jury". *Toner*, 828 F.2d at 512. The instructions on infringement, and the specific questions asked by special verdict, were designed to resolve the issues raised at trial. There was testimony on both sides of Suzuki's assertion that its suspension was not the same as Richardson's because it produced a different rising rate. We referred *supra* to special verdicts 9(a)(2) and 9(b)(2):

9(a)(2). Does defendant's Model M produce rising rate substantially the same as the rising rate produced under the teachings of the plaintiff's patent?

Answer: YES

9(b)(2). Does defendant's Model C produce rising rate substantially the same as the rising rate produced under the teachings of the plaintiff's patent?

Answer: YES

Another special verdict in the infringement section asked the jury:

11. Does claim 9 of the Richardson Patent describe the invention of a rising rate in terms of what the invention will do rather than in terms of physical arrangement?

Answer: NO

We conclude that the answer "yes, with the rising rate" in verdicts 9(a) and 9(b) is the jury's response to Suzuki's argument, rather than as a finding that only the rising rate claim limitation, and no other, is embodied in the Suzuki suspensions.

We discern no support in the record for the district court's conclusion that verdicts 9(a) and 9(b) meant that the rising rate was the only area of infringement. Structure corresponding to every element of every clause of claims 1 and 9 was identified by witnesses as embodied in the accused motorcycles. There was no real dispute that of the nine or eleven elements in these claims (depending on how counted), all but one were literally present. The dispute centered on one element, the attachment of the spring in the claim clause "spring means having a first end pivotally secured to said frame", since this was the clause affected by the modifications of the Alternate Shock Mount and the criss-cross. In the Alternate Shock Mount, as we have discussed, the spring is pivotally secured to a swing arm that in turn is pivotally secured to the frame, instead of being pivotally secured directly to the frame as is shown in the '332 specification.

Richardson argues that the spring can be either directly or indirectly pivotally secured to the frame, without avoiding literal infringement of the claim. Richardson alternatively argues that on a correct definition of the doctrine of equivalents, citing *Graver Tank*, 339 U.S. at 608 [85 USPQ at 330], these securements are equivalent because the structures are substantially the same and perform substantially the same function in the same way.

The jury had been given the dictionary definition that "equivalent" means "corresponding or virtually identical, especially in effect or function". This definition was reinforced by the phrasing of verdicts 9(a)(1) and 9(b)(1), wherein the question itself instructed the jury on the difference between the linkages, while remaining silent on the similarities.

This presentation was highly prejudicial. Indeed, these verdicts well illustrate the truism that the way a question is asked can direct the answer. "The decision to submit interrogatories, and the precise language in which they are couched, can have an untoward effect on a verdict, if certain elements of the trial or the evidence are thereby overly emphasized in the jury's mind." *Weinar v. Rollform Inc.*, 744 F.2d 797, 809, 223 USPQ 369, 376 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1084 (1985).

Further, and equally prejudicial, special verdicts 9(a)(1) and 9(b)(1) isolated this specific claim element so that it was removed from the perspective that is obtained only when the claimed invention is viewed in its entirety. *See, e.g., Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1363, 219 USPQ 473, 482 (Fed. Cir. 1983). We recently reemphasized in *United States Steel Corp. v. Phillips Petroleum Co.*, No. 88-1166, -1167, -1168, -1169, -1170, -1171, slip op. at 13-14 [9 USPQ2d 1461] (Fed. Cir. Jan. 10, 1989), in discussing *Graver Tank*, that there is no error in considering "the principle of the claimed invention".

A device that embodies improvements on a claimed structure does not automatically avoid the reach of the claim. *See, e.g., Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1580, 224 USPQ 409, 417 (Fed. Cir. 1984) (separately patentable improvement may also be an equivalent under the doctrine of equivalents); *A.B. Dick Co. v. Burroughs Corp.*, 713 F.2d 700, 703 218 USPQ 965 967-68 (Fed. Cir. 1983) (infringement not avoided "merely by adding elements"), *cert. denied*, 464 U.S. 1042 (1984). Each case must be decided on its particular facts, viewing the changes in the accused structure in light of the claimed invention. *See generally Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934-35, 4 USPQ2d 1737, 1739 (Fed. Cir. 1987), *cert. denied*, 108 S.Ct. 1226 (1988), and *cert. denied*, 108 S.Ct. 1474 (1988); *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 805 F.2d 1558, 1569-70, 231 USPQ 833, 840 (Fed. Cir. 1986), *reh'g denied*, 846 F.2d 1369, 6 USPQ2d 1886 (Fed. Cir. 1988);

[4] We conclude that the jury verdicts, viewed in light of the instructions, held that the Suzuki motorcycles with a rising rate infringed claim 9. We also conclude that on correct instructions no reasonable jury could have found that the claimed invention and the accused structures are not equivalent, on the established facts of record, applying the

correct law of *Graver Tank*. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 252 (1986) ("The mere existence of a scintilla of evidence in support of the plaintiff's position will be insufficient; there must be evidence on which the jury could reasonably find for the plaintiff."); *Pullman-Standard v. Swint*, 456 U.S. 273, 291-92 (1982) ("where findings [by the district court] are infirm because of an erroneous view of the law, a remand is the proper course unless the record permits only one resolution of the factual issue"); *Dana Corp. v. IPC Limited Partnership*, 860 F.2d 415, 419, 8 USPQ2d 1692, 1696 (Fed. Cir. 1988) (when there are sufficient established facts of record, appellate court has discretion to determine the merits of JNOV motion.).

The jury verdicts of infringement are supported by substantial evidence, and are upheld. The judgment of infringement is affirmed.

III
Damages for Patent Infringement

As damages for patent infringement the jury assessed a royalty of fifty cents per motorcycle. Richardson states that this royalty is unreasonably low, and resulted from erroneous and prejudicial jury instructions. We review the award on the reasonable jury/substantial evidence standard. *Shatterproof Glass Corp.*, 758 F.2d at 627-28, 225 USPQ at 643-44.

The court told the jury: "Now, I will sustain, I will uphold your verdict [of infringement], but in determining damages and determining any royalty, it seems to me that you must consider that the infringement was a relatively minor infringement." This instruction derived, as we have discussed, from the erroneous interpretation of the verdicts as limited to the "rising rate" clause. We must determine whether this erroneous instruction was prejudicial to the jury's assessment of damages. The Ninth Circuit has stated that "we will reverse a judgment because of a mistake in jury instructions only if the error was prejudicial." *Smiddy v. Varney*, 665 F.2d 261, 265 (9th Cir. 1981), *cert. denied*, 459 U.S. 829 (1982).

35 U.S.C. §284 provides that damages shall be "adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer". *Fromson v. Western Litho Plate and Supply Co.*, 853 F.2d 1568, 1574, 7 USPQ2d 1606, 1612 (Fed. Cir. 1988). The jury was told that a royalty of $2.00 per motorcycle with an annual minimum of $70,000 had been agreed to by Suzuki and Richardson in the Option and License Agreement. There was testimony of much higher royalties paid by others for similar contributions to motorcycles. Suzuki presented testimony that the $2.00 in the agreement does not apply, but should be the starting point for reducing the royalty because the infringement was minor.

[5] We must assume that the jury followed the court's instruction that the infringement was minor. That instruction was a misinterpretation of the jury verdict of infringement, and it usurped the role of the jury. Absent this prejudicial instruction there was no reasonable basis on which reasonable jury could have found that fifty cents was a reasonable royalty.

The judgment of damages for patent infringement is vacated. We remand for retrial of the question.

IV
Richardson's Technical Information

Issues relating to Richardson's technical information were presented at trial on the legal theories of breach of contract and the tort of misappropriation of trade secrets. The district court concentrated on the tort issues in presentation to the jury, apparently accepting Suzuki's position that it had complied with its contractual obligations to Richardson. The court thus required that Richardson prove the existence of legally protectible trade secrets and their misappropriation by Suzuki.

In the only special verdict on the contract issues, the jury found that Suzuki did not violate its duty of good faith and fair dealing in its relationship with Richardson. The jury instructions on the contractual relationship, however, are pertinent to, and intertwined with, the trade secret issues.

A. The Contractual Relationship

In matters of contract law and interpretation we apply the discernable law of the state of California. *Universal Gym Equipment, Inc. v. ERWA Exercise Equipment Ltd.*, 827 F.2d 1542, 1550, 4 USPQ2d 1035, 1040 (Fed. Cir. 1987). At trial Richardson pressed, unsuccessfully, the California law that a covenant of good faith and fair dealing is implied between parties to a contract. *Seaman's Direct Buying Service, Inc. v. Standard Oil Co.*, 38 Cal.3d 752, 768, 686 P.2d 1158, 1166, 206 Cal.Rptr. 354, 363 (1984) ("It is well settled that, in California, the law implies in *every* contract a covenant of good faith and fair dealing." (Emphasis in original)).

The contract between Richardson and Suzuki was explained at trial, including the clause wherein Suzuki agreed not to use or disclose the "technical information, know-how, inventions, use data, and design specifications" that it received from Richarson. In discussing whether Suzuki was restrained in its post-contract use of Richardson's information, the district court at first instructed the jury that Suzuki was entitled by law "to use the most efficient means, even though they got it from plaintiff", stating that only "valid trade secrets" were subject to the contractual restraints:

> And then after Suzuki's election not to take a license, of course, they were not supposed to use the plaintiff's trade secrets. That's what the contract says. And once again, you're going to have to determine whether these eleven were valid trade secrets. To what extent did the defendant use them, to what extent would the defendant otherwise have developed them.
>
> Now, some of these trade secrets refer to the best alignments and designs. Well, it seems incongruous to say to the defendant they cannot use the best because the best was intentionally disclosed by the plaintiff, and even though experimentation by the defendant surely would have revealed the best as the patent says that it would.
>
> Were the defendants precluded from using the best or were they obliged to use something less efficient. I can't conceive of the defendants not being entitled to use the most efficient means, even though they got it from the plaintiff.

The court later qualified this position by referring to reverse engineering as being improper — although it is far from clear what a reasonable jury would have understood from the court's instructions:

> But on further reflection, I have to acknowledge that if you find there was a confidential relationship or contract that prohibited Suzuki from using the plaintiff's trade secrets, technical information or know-how, inventions or use data that the plaintiff gave them, unless it exercised the option, if you find those things to be true, I suppose it would be improper for Suzuki to reverse engineer from Richardson's prototypes, or from trade secrets or other information that he gave them.
>
> The defense of reverse engineering does not apply to information received in confidence or whereas here the information is given under a contract.

Reviewing these instructions in the context of the contract and trade secret questions that were before the jury, we conclude that the jury was incorrectly instructed on the law. *See Bulgo v. Munoz*, 853 F.2d 710, 714 (9th Cir. 1988) (quoting *Los Angeles Memorial Coliseum Comm'n v. National Football League*, 726 F.2d 1381, 1398 (9th Cir.), *cert. denied*, 469 U.S. 990 (1984)) (instructions reviewed to determine "whether, viewing the jury instructions as a whole, the trial judge gave adequate instructions on each element of the case to ensure that the jury fully understood the issues.")

[6] In *Universal Gym Equipment*, 827 F.2d at 1549, 4 USPQ2d at 1040, we affirmed liability under California law based on breach of contract, when the parties contracted to limit the use by the recipient of "features, designs, technical information, or know-how" disclosed under the contract. We also affirmed that such a contractual arrangement is not incompatible with the patent law, *id.* at 1550, 4 USPQ at 1041, an issue on which the district court in Richardson's case also appears to have been misled, and to have misled the jury. *See Components for Research, Inc. v. Isolation Products, Inc.*, 241 Cal.App.2d 726, 730, 50 Cal.Rptr. 829, 832 (Cal. Dist.Ct.App. 1966) ("The judgment here but affords protection against the use of plaintiff's trade secrets by those to whom they had been disclosed in confidence. Whether the idea was patented or not, plaintiff is entitled to such protection").

The district court erred in law, in limiting the scope of protected information beyond that set forth in the contract, and in its instructions to the jury as to Suzuki's obligations. These errors are reflected in the trade secret issues.

B. The trade secret issues

The jury, despite the excessively restrictive instructions on what were trade secrets, found that certain items that Suzuki had received from Richardson were trade secrets and had been misappropriated, and assessed damages therefor. The jury also assessed damages for use by Suzuki of certain other items that did not "rise to the dignity of trade secrets", in the words of the special verdicts.

Richardson specified eleven items that he had disclosed to Suzuki under the contract, and that he asserted to be trade secrets; to wit: (1) the optimal characteristics of a motorcycle rear-wheel suspension shock absorber, showing three external adjustments, (2) engineering drawings of his proposed and furnished suspension systems, (3) 1978 and

1979 Suzuki motorcycles modified by Richardson with his rising rate suspension, (4) specific force-velocity curves needed to obtain the advantages of Richardson's invention in Suzuki's motorcycles, (5) design modifications to extend rear wheel travel over earlier rising-rate designs, (6) design of the Alternate Shock Mount including drawings and knowhow, (7) the optimum use and types of certain bearings in the suspension, (8) motorcycle testing and tuning criteria, (9) his bell crank designs and design criteria, (10) adjustments in the angles and dimensions of the parts of the suspension and their effect on performance, and (11) the straight line tubular motorcycle frame.

The California law of trade secrets follows the Restatement definition:

> A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. . . . Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article.

By-Buk Co., 163 Cal.App.2d at 166, 329 P.2d at 152, 118 USPQ at 553, citing Restatement (First) of Torts, §757 comment b (1939). The court in *By-Buk Co.* reaffirmed "plaintiff's right not to have its [trade secret] processes wrongfully disclosed to others and used to its detriment." *Id.* at 167, 329 P.2d at 153, 118 USPQ at 553.

The burden of proof was placed on Richardson to prove that his information met the legal requirements of a protectible trade secret. *Forro Precision, Inc. v. International Business Machines Corp.*, 673 F.2d 1045, 1056-57, 215 USPQ 299, 305-6 (9th Cir. 1982). This in turn required "either a covenant or a confidential relationship" as a premise of relief. *Futurecraft Corp. v. Clary Corp.*, 205 Cal.App.2d 279, 283, 23 Cal.Rptr. 198, 207-208 (Cal. Dist.Ct.App. 1962) (discussing elements of trade secret protection). Richardson met this requirement through his contractual covenant.

The district court told the jury, several times, that because Suzuki might have developed or could have developed on its own the information it received from Richardson, such information can not be protected as a trade secret. The court said: "Now I think we must assume that the defendant could have accomplished whatever the plaintiff may have contributed toward the development of Models M and C." Whatever the validity of the proposed assumption as to Suzuki's abilities, the court's conclusion is contrary to California law:

> It is not necessary in order that a process of manufacture be a trade secret that it be patentable or be something that could not be discovered by others by their own labor and ingenuity.

By-Buk Co., 163 Cal.App.2d at 166, 329 P.2d at 152, 118 USPQ at 553. Nor does the possibility of independent discovery relieve Suzuki of liability:

> "[S]ecret formulas and processes * * * are property rights which will be protected by injunction, not only as against those who attempt to disclose or use them in violation of confidential relations or contracts express or implied, but as against those who are participating in such attempt with knowledge of such confidential relations or contract, though they might in time have reached the same result by their own independent experiments or efforts."

Id. at 167, 329 P.2d at 153, 118 USPQ at 553-54 (quoting *Herold v. Herold China & Pottery Co.*, 257 F. 911, 913 (6th Cir. 1919)). Indeed, Suzuki did not argue that it had actually developed on its own the information that it first received from Richardson. Although Richardson adduced evidence that Suzuki had been unable to solve this problem, it is not relevant what Suzuki might have been able to do on its own. Ninth Circuit law upholds trade secret status even had the same information been obtainable from other sources. *Clark v. Bunker*, 453 F.2d 1006, 1010, 172 USPQ 420, 423 (9th Cir. 1972) (trade secrecy "is not negated because defendant by an expenditure of effort might have collected the same information from sources available to the public.") (footnote omitted).

The court also erroneously instructed the jury that "slavish" copying is necessary for misappropriation, and that an exercise of independent judgment would remove the information from protection. The court instructed the jury to consider: "Were they secrets. And, second, did the defendants slavishly use them or did they make up their own minds." These views are contrary to California law. "[D]efendants cannot escape responsibility by showing that they have improved upon or modified the plaintiff's process." *By-Buk Co.*, 163 Cal.App.2d at 169, 329 P.2d at 154, 118 USPQ at 554. The court observed in *Sinclair v. Aquarius electronics, Inc.*, 42 Cal.App.3d 216, 222, 116 Cal.Rptr. 654, 659, 184 USPQ 682, 684 (Cal. Ct.App. 1974) that minor variations are to be expected.

Suzuki argued to the jury, and repeats on appeal, that information that Richardson developed after issuance of the '332 patent, including the Alternate Shock Mount, is barred from trade secret status because it was generally disclosed in Richardson's patent or known to the general public, or because it merely implements the patented invention.

The legal status of information and improvements made after a patent application has been filed is independent of the presence, or absence, of the patent application or ensuing patent. The information and improvements may be separately patentable; they may be preserved in confidence and disclosed only in accordance with agreement; and they are protected against misappropriation in accordance with the laws of contract and tort. The court misstated the law in telling the jury that the jury could decide whether Richardson could have both a valid patent and legal protection for later-developed information on the patented invention:

> So on the one hand [Richardson] says the ordinary person skilled in the art can take this patent and use it and make a machine based upon it. But, on the other hand, he says, however, the experimentation and the ability to do this constitutes trade secrets for which you must pay me. Now, that constitutes a dilemma and it's up to you to determine the extent to which Mr. Richardson may claim as trade secrets things that the ordinarily prudent person skilled in the art should be able to do on his own.

The district court's phrase "should be able to do on his own" may explain its misperception of the law. It is not known what Suzuki was able to do on its own, for Suzuki not only sought Richardson's knowhow, improvements, data, and information, but also agreed to respect the confidentiality thereof. This information is intellectual property in the eyes of the law, and is protected in accordance with law. *See generally Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 493 [181 USPQ 673, 682] (1974). *See also Components for Research, Inc.*, 241 Cal. App.2d at 730, 50 Cal.Rptr. at 832 (whether the product design was patented or not, plaintiff is entitled to trade secret protection for manufacturing process); *Sinclair*, 42 Cal. App.3d at 225, 116 Cal.Rptr. at 660, 184 USPQ at 686 ("Trade secret law encourages invention in areas where patent law does not reach"). *Accord Thermotics, Inc. v. Bat-Jac Tool Co., Inc.*, 541 S.W.2d 255, 261, 193 USPQ 249, 253 (Tex. Civ.App. 1976) (post-patent improvement protectable under trade secret law); *Franke v. Wiltschek*, 209 F.2d 493, 495, 99 USPQ 431, 433 (2d Cir. 1953) (immaterial that defendants could have derived trade secrets from expired patent).

[7] It is apparent that the court imposed a higher standard for trade secret status than is contained in California law. The court's instructions, commentary, and phrasing of the special verdicts not only placed a prejudicially heavy burden on Richardson, but also demeaned the information itself.

Despite this prejudicial environment, the jury found that items 5 and 6 were trade secrets and had been misappropriated by Suzuki, and assessed damages therefore. The jury also found that items 1-4 and 7-11 were not trade secrets, and that for some but not all of these items compensation should be awarded based on "benefit from the plaintiff's knowledge and from the time and effort expended by him".

The district court granted Suzuki's motion for a new trial with respect to items 5 and 6, and upheld the jury verdicts with respect to items 1-4 and 7-11.

C. The new trial of items 5 and 6

The grant of a new trial is ordinarily not reviewable, but on this issue the district court entered final judgment for purposes of appeal, and certified three questions. The first certified question is:

> 1. Where the plaintiff's asserted trade secrets Nos. 5 and 6: (a) Actually valid proprietary trade secrets, as the jury found and awarded very substantial royalties; or (b) Did the plaintiff's contributions in these respects represent no more than the services of a skilled mechanic, which readily could have been duplicated by the defendant, and which entitled the plaintiff only to quantum meruit compensation, as the court believes; or (c) Were the plaintiff's contributions no more than those contemplated under the option agreement and paid for by the defendant, as the defendant contends?

We respond to this question: From the record before us the jury verdict that items 5 and 6 met the requirements for trade secret protection was supported by the great weight of the evidence. Richardson and Cazort testified about the design modifications that were the subject of item No. 5 and the Alternate Shock Mount subject of item No. 6. The Alternate Shock Mount was considered sufficiently novel and valuable that Suzuki included it in a patent application filed in Japan and later in the United States. The record does not negate the jury's determination of the value of this information. According to California law it is immaterial what Suzuki could have done, for it chose to use Richardson's information, which it obtained under restraint.

In further response, we remark that the relation between the parties, set by contract, was a routine commercial arrangement wherein Richardson agreed to facilitate Suzuki's testing and evaluation of Richardson's invention. This did not convert Richardson's work in adapting his invention to Suzuki's motorcycle into the work of a hired technician whose work product was automatically owned by Suzuki. The proprietary nature of the work done and information provided by Richardson was established by agreement, as was the agreement that Suzuki would not use this information if it did not exercise its option.

[8] There was substantial evidence before the jury that the information on items 5 and 6 was not publicly known, that Suzuki agreed to receive and preserve it in confidence, and that the information fully satisfies the statutory and jurisprudential requirements for protectible trade secrets.

In order to vacate the jury's verdict upholding items 5 and 6 as trade secrets and grant a new trial thereon, the trial court must find that the jury's verdict "is contrary to the clear weight of the evidence, or is based upon evidence which is false, or to prevent, in the sound discretion of the trial judge, a miscarriage of justice." *Hanson v. Shell Oil Co.*, 541 F.2d 1352, 1359 (9th Cir. 1976), *cert. denied*, 429 U.S. 1074 (1977) (quoting *Moist Cold Refrigerator Co. v. Lou Johnson Co.*, 249 F.2d 246, 256, 115 USPQ 160, 168-69 (9th Cir. 1957), *cert. denied*, 356 U.S. 968 [117 USPQ 498] (1958)); *William Inglis & Sons Baking Co. v. ITT Continental Baking Co., Inc.*, 668 F.2d 1014, 1027 (9th Cir. 1981), *cert. denied*, 459 U.S. 825 (1982). It is insufficient that the district court would simply have reached a different verdict.

Our review requires determination of whether the district court abused its discretion in its decision to grant the new trial. *Id. See Transgo, Inc. v. Ajac Transmission Parts Corp.*, 768 F.2d 1001, 1014, 227 USPQ 598, 602 (9th Cir. 1985), *cert. denied*, 474 U.S. 1059 (1986) ("the grant or denial of either a motion for a new trial or a motion to amend the judgment must be reviewed on the basis of a determination of whether the district court abused its discretion.") *See generally Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 756 F.2d 1574, 1581, 225 USPQ 357, 363 (Fed. Cir. 1985) ("Abuse of discretion may be established by showing that the district court either made an error of law, or a clear error of judgment, or made findings which were clearly erroneous.") The district court's statements, for example with respect to item 5, "I simply cannot conclude that that is a trade secret. It was an attempt to help Suzuki adapt the Richardson concept to the Suzuki machine . . .", reflect an error of law.

Despite the legal error in the instructions, as we have discussed, any prejudice resulting therefrom favored Suzuki, not Richardson. We conclude that the district court exceeded its discretionary authority in vacating the jury verdict and ordering a new trial. That action is reversed, and the jury verdict is reinstated as to items Nos. 5 and 6, including the damages assessed for items Nos. 5 and 6.

D. Items 1-4 and 7-11

For asserted trade secrets Nos. 1-4 and 7-11, the jury may well have been led by erroneous instructions into applying an incorrect legal standard, in finding that these items were not trade secrets. It appears, however, that Richardson did not move for judgment n.o.v. or a new trial on these verdicts. Although there is a hint in the post-trial colloquy that the court intended or was willing to retry all the trade secret issues along with items 5 and 6, this does not satisfy the rule, supported by logic, that the formalities of post-trial motions be respected. *Snellman v. Ricoh Co.*, 836 F.2d 528, 534, 5 USPQ2d 1341, 1346 (Fed. Cir. 1987) (applying Ninth Circuit law in holding that motions for judgment n.o.v. and for a new trial must be made). Thus we have no authority to review these verdicts.

By special verdict the jury was also asked to assess damages for Suzuki's use of the information encompassed in each of items 1-4 and 7-11, even if the information did not "rise to the dignity of trade secrets". The jury determined this sum for each item, some at $0, the highest at $25,000, for a total of $104,000. The district court sustained this award, on a theory of "quantum meruit compensation". Both parties appeal this award, Richardson asserting its inadequacy, and Suzuki arguing that Richardson was fully paid for his information in the option agreement, and is not entitled to damages for Suzuki's use of any information received from Richardson.

We have rejected, as a matter of law, Suzuki's theory that it is entitled to use, free, the information disclosed by Richardson under the option agreement. Richardson's disclosures were made under terms that prohibited their use by Suzuki if the option was not exercised. This contract provision does not depend on whether the information is a trade secret, but only on whether it was previously known to Suzuki or generally known to the public, as discussed *ante*.

An appellate tribunal is abjured to determine whether a jury verdict can be sustained, on any reasonable theory. *Jaffke v. Kunham*, 352 U.S. 280, 281 (1957) ("A successful party in the District Court may sustain its judgment on any ground that finds support in the record.")

[9] There was substantial evidence at trial whereby a reasonable jury could have determined the sums awarded by this jury. Indeed, Suzuki does not challenge the valuations of the damage awards for items 1-11, arguing instead that nothing at all is owing.

The judgment as to items 1-4 and 7-11 is affirmed, including damages assessed for these items in the total amount of $104,000.

V
Injunction

The district court, having entered final judgment that the Suzuki Full Floater suspension infringed claim 9 of the '332 patent, denied Richardson's motion for injunction.

[10] Infringement having been established, it is contrary to the laws of property, of which the patent law partakes, to deny the patentee's right to exclude others from use of his property. 35 U.S.C. §261. "[T]he right to exclude recognized in a patent is but the essence of the concept of property". *Connell*, 722 F.2d at 1548, 220 USPQ at 198 (citing *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983)).

It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1281, 6 USPQ2d 1277, 1283 (Fed. Cir. 1988). Suzuki has presented no such reason. This court stated in *H.H. Robertson Co. v. United Steel Deck, Inc.*, 820 F.2d 384, 390, 2 USPQ2d 1926, 1929-30 (Fed. Cir. 1987), when reviewing an injunction granted *pendente lite*:

> In matters involving patent rights, irreparable harm has been presumed when a clear showing has been made of patent validity and infringement. *Smith International*, 718 F.2d at 1581, 219 USPQ at 692. This presumption derives in part from the finite term of the patent grant, for patent expiration is not suspended during litigation, and the passage of time can work irremediable harm.

We observe that the '332 patent will expire in less than four years, that litigation started over eight years ago, and that the district court remarked that further proceedings could consume "several years".

Further, a misappropriator of trade secrets has no authorization of right to continue to reap the benefits of its wrongful acts. Richardson is entitled to an injunction against Suzuki's continuing use of trade secrets Nos. 5 and 6. *By-Buk Co.*, 163 Cal. App.2d at 167, 329 P.2d at 153, 118 USPQ at 553-54; *Components for Research, Inc.*, 241 Cal.App.2d at 730, 50 Cal.Rptr. at 832.

The denial of Richardson's request for injunction is reversed. On remand the district court shall enter appropriate injunctive relief.

VI
Fraud

The jury found by special verdicts that Suzuki fraudulently induced Richardson to reveal his trade secrets by concealing its intention not to exercise its option or take a license, and that Suzuki fraudulently concealed from Richardson the fact that it was developing the Full Floater "with the intention of declining to exercise the option and then nevertheless to utilize the plaintiff's trade secrets in the full floater". The jury also found fraud in that Suzuki filed the Tamaki patent application "in the knowledge that the invention asserted therein (the spring/swing arm connection) was first disclosed to them by Richardson". The jury awarded Richardson $20,000 in compensatory and $100,000 in punitive damages.

The district court vacated the judgment and ordered a new trial. Suzuki asserts that the court should have granted Suzuki's motion for judgment n.o.v. instead of ordering a new trial, while Richardson asserts that the court should have upheld the jury verdicts.

The district court certified the question of how to treat its belief that Suzuki did not commit the offenses of fraud and concealment found by the jury, including the question of punitive damages. We first must consider whether a reasonable jury could have reached the verdicts here reached. *Lavender v. Kurn*, 327 U.S. at 653. Apt is the statement of the Ninth Circuit in *Crocker-Citizens Nat'l Bank v. Control Metals Corp.*, 566 F.2d 631, 635 (9th Cir. 1977): "Courts are not free to reweigh the evidence and set aside the jury verdict merely because the jury could have drawn different inferences or conclusions or because judges feel that other results are more reasonable", quoting *Cockrum v. Whitney*, 479 F.2d 84, 86 (9th Cir. 1973), in turn quoting *Tennant v. Peoria & P. U. Ry. Co.*, 321 U.S. 29, 35 (1944).

[11] The record shows that there was testimony, based on certain of Suzuki's documents, on which a reasonable jury could have

supported these verdicts. There were issues of credibility, and inferences that could reasonably have been drawn in a manner adverse to Suzuki. "The credibility of witnesses and the weight of the evidence are issues for the jury and are generally not subject to appellate review." *Benigni*, 853 F.2d at 1525. While the district court may have believed that Suzuki did not commit fraud, review shows that the requirements for vacating the jury verdicts and relitigating the issue were not met. *Hanson*, 541 F.2d at 1359; *William Inglis*, 668 F.2d at 1027. A fresh trial is not warranted simply because the district court would have reached a different verdict.

A jury assessment of punitive damages is not excluded in circumstances such as those here presented, where the jury expressly found fraud. *Tri-Tron Int'l v. Velto*, 525 F.2d 432, 437, 188 USPQ 177, 181 (9th Cir. 1975) ("where compensatory damages are sought and awarded, the court has power, on a proper record, to award punitive damages") , citing *Clark v. Bunker* 453 F.2d 1006 1012, 172 USPQ 420, 424 (9th Cir. 1972), in turn citing *El Rancho, Inc. v. First Nat'l Bank*, 406 F.2d 1205, 1218 (9th Cir. 1968), *cert. denied*, 396 U.S. 875 (1969) (jury verdict awarding punitive damages was supported by evidence of malice) and *Davenport v. Mutual Benefit Health & Accident Ass'n*, 325 F.2d 785, 787 (9th Cir. 1963) (remand for trial to allow evidence of fraud to support claim of punitive damages.)

The district court correctly instructed the jury as to the law, stating that "it's only if you find that the defendants' conduct stem from malice, oppression, fraud or bad faith that you can find any punitive damage at all." As stated in *In re Innovative Construction Systems, Inc.*, 793 F.2d 875, 889, 230 USPQ 94, 104 (7th Cir. 1986):

> [A] breach of faith underlies every trade secret claim. However, establishing that breach alone is insufficient to warrant an award of punitive damages; one must also demonstrate that the defendant acted wantonly, willfully, or in reckless disregard of the plaintiff's rights. (Citations omitted)

See also Neal v. Farmers Insurance Exchange, 21 Cal.3d 910, 928, 582 P.2d 980, 986, 148 Cal.Rptr. 389, 395 (1978) ("In order to justify an award of exemplary damages, the defendant must be guilty of oppression, fraud or malice. (Civ. Code §3294.) He must act with the intent to vex, injure or annoy, or with a conscious disregard of the plaintiff's rights") (quoting *Silberg v. California Life Insurance Co.*, 11 Cal.3d 452, 462, 521 P.2d 1103, 1110, 113 Cal.Rptr. 711, 718 (1974)); *Reynolds Metals Co. v. Lampert*, 316 F.2d 272, 275 (9th Cir. 1963), *cert. denied*, 376 U.S. 910 (1964) (in jury trial, evidence to justify punitive damages must show injury was done maliciously or willfully and wantonly or committed with bad motive or recklessly); *Transgo, Inc.*, 768 F.2d at 1024 [227 USPQ at 610] (The determination to award punitive damages was "within the exclusive province of the jury") (quoting *Runge v. Lee*, 441 F.2d 579, 584, 169 USPQ 388, 392 (9th Cir.), *cert. denied*, 404 U.S. 887 [171 USPQ 322] (1971)).

The jury having found by special verdicts that Suzuki acted fraudulently, the requisite intent was established. "We give the trial judge and jury wide discretion in assessing punitive damages." *Hatrock v. Edward D. Jones & Co.*, 750 F.2d 767, 772 (9th Cir. 1984). The jury's award was not "so disproportionate to the damages sustained as to be the result of passion or prejudice". *Id.* (citing *Neal*, 21 Cal. 3d at 928, 582 P.2d at 990, 148 Cal. Rptr. at 399). *Transgo, Inc.*, 768 F.2d at 1024 [227 USPQ at 610] ("We will not overturn such an award unless it appears that the jury was influenced by passion or prejudice.") (citing *Harmsen v. Smith*, 693 F.2d 932, 947 (9th Cir. 1982), *cert. denied*, 464 U.S. 822 (1983)).

We answer the certified question that, in this case, neither a new trial nor judgment n.o.v. was warranted. The order of a new trial on this issue is vacated. The judgment on the jury verdicts of fraud and the award of compensatory and punitive damages is reinstated.

VII
The Tamaki Patent

Richardson states that Suzuki fraudulently patented the Alternate Shock Mount that had been disclosed to Suzuki by Richardson and Cazort in a patent that also described the "criss-cross" modification developed at Suzuki. There was evidence and argument on the factual premises, including the absence of supporting documentation on the part of the named inventors Hirohide Tamaki and Manabu Suzuki, the earliest record on their behalf being dated October 1979. The corresponding Japanese patent application was filed on October 16, 1979.

The jury rendered the following special verdicts:

> C-3. Did Suzuki and/or Mr. Tamaki file the Tamaki patent application in the knowledge that the invention asserted therein (the spring/swing arm connection) was first disclosed to them by Richardson:
>
> Answer: YES
>
> H-1. Do you find that the Plaintiff, Richardson, is the real inventor of the invention shown in the Tamaki patents and patent applications?
>
> Answer: NO

It was not significantly disputed at trial that claims 1 through 8 of the Tamaki corresponding United States Patent No. 4,457,393 cover the Alternate Shock Mount of Richardson and Cazort, and that claim 9 includes the criss-cross embodiment of Tamaki and Suzuki. (The scope of claim 5 is raised, but is not material to our conclusion.)

The district court denied Richardson's post-trial motion that the Tamaki patent be assigned to Richardson. In colloquy with counsel the court explained that it could not do so because "the jury said Richardson wasn't the inventor". Indeed it was conceded, and discussed at trial, that Richardson and Cazort, not Richardson alone, invented the Alternate Shock Mount. Cazort, as well as Richardson, testified at length on this structure. Special verdict H-1 that Richardson is not "the real inventor" is in accord with the co-inventor status of Cazort, and also with the Japanese contribution of the criss-cross embodiment.

[12] The force of special verdict C-3 is not diminished. This verdict was not challenged on appeal. "It was further the duty of the court to direct the appropriate judgment to be entered upon the special verdict." *Traders and General Insurance Co. v. Mallitz*, 315 F.2d 171, 175 (5th Cir. 1963). The district court having failed to implement this verdict, Richardson's motion for judgment and for assignment of the Tamaki patents was not out of order.

The remedy of assignment of the Tamaki patents is a different question from whether Richardson is a sole or joint inventor. The correction of inventorship is an administrative step, and is not before the court. Similarly, the presence of a further modification in one or two claims of the patent directed to the Alternate Shock Mount does not negate the imposition of an equitable remedy. To hold otherwise would ratify and indeed reward the wrongdoing.

Based on the jury verdict, Richardson is entitled to ownership of the patents as against Suzuki. Such remedy is appropriate under the circumstances; *see, e.g., Colgate-Palmolive Co. v. Carter Products, Inc.*, 230 F.2d 855, 865, 108 USPQ 383, 391 (4th Cir.), *cert. denied*, 352 U.S. 843 [111 USPQ 467] (1956) (corporate assignee of patent application ordered to assign to original holder of trade secrets all rights to patent applications based thereon); *De Long Corp. v. Lucas*, 176 F.Supp. 104, 134 [122 USPQ 471, 493] (S.D.N.Y. 1959), *aff'd*, 278 F.2d 804 [125 USPQ 370] (2nd Cir.), *cert. denied*, 364 U.S. 833 [127 USPQ 555] (1960) (when an employee has acquired patents on inventions developed by his former employer, "the courts will hold the wrongdoer to be a constructive trustee of the property misappropriated and will order a conveyance by the wrongdoer to the former employer"); *Becher v. Contoure Laboratories, Inc.*, 279 U.S. 388 (1929) (same); *Saco-Lowell Shops v. Reynolds*, 141 F.2d 587, 598, 61 USPQ 3, 13 (4th Cir. 1944) (requiring assignment of patent based on ideas received by licensee from licensor in confidence during development of invention for market).

Suzuki argues that Richardson has no remedy other than by seeking an interference in the United States Patent and Trademark Office with his own invention, and presumably by taking similar actions, if such are available, in other countries. We do not agree. The courts are not powerless to redress wrongful appropriation of intellectual property by those subject to the courts' jurisdiction.

The denial of Richardson's motion for judgment is reversed. Suzuki shall assign to Richardson the patents filed by Suzuki that include the Richardson/Cazort invention of the Alternate Shock Mount, in all countries. We remand to the district court for the purpose of implementing compliance.

VIII
Prejudgment Interest

[13] The district court denied Richardson's request for prejudgment interest on both the patent infringement and the trade secret damage awards. Prejudgment interest is the rule governing this class of award. *General Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655, 217 USPQ 1185, 1188 (1983); *Lummus Industries, Inc. v. D.M. & E. Corp.*, 862 F.2d 267, 274, 8 USPQ2d 1983, 1988 (Fed. Cir. 1988); *Fromson*, 853 F.2d at 1573-74, 7 USPQ2d at 1611; *Bio-Rad Laboratories, Inc. v. Nicolet Instrument Corp.*, 807 F.2d 964, 967, 1 USPQ2d 1191, 1193 (Fed. Cir. 1986), *cert. denied*, 107 S.Ct. 3187 (1987).

No exceptional circumstances having been shown, and no reason why damages for misappropriated trade secrets should be treated differently from damages for patent infringement, the denial of prejudgment interest is reversed.

IX
Willful Infringement and Exceptional Case

The district court refused to submit the question of willful infringement to the jury, stating that Richardson had not provided sufficient evidence to go to the jury.

To refuse to give an issue to the jury is to direct a verdict in favor of the opposing party. Thus we review the district court's ruling on the standard of "whether the evidence permits only one reasonable conclusion after viewing the evidence in the light most favorable to the non-moving party and drawing all inferences in favor of that party." *Bulgo v. Munoz*, 853 F.2d 710, 714 (9th Cir. 1988) (citing *Peterson v. Kennedy*, 771 F.2d 1244, 1256 (9th Cir. 1985), *cert. denied*, 475 U.S. 1122 (1986)). *See also Connell*, 722 F.2d at 1546, 220 USPQ at 197.

[14] Richardson refers to the evidence adduced in connection with the jury verdicts of fraud, to the verdicts of misappropriation of trade secrets 5 and 6, to the absence of any opinion of United States counsel concerning validity of the '332 patent when Suzuki started its infringing activity, and to evidence from Suzuki's records tending to show bad faith. Viewing this evidence in the light most favorable to Richardson, and drawing all reasonable inferences in his favor, there was sufficient evidence to take to the jury, for the evidence does not require a verdict in favor of Suzuki. Absent sufficient basis for directing the verdict, Richardson has the right of jury determination of this factual question. Willfulness of behavior is a classical jury question of intent. *Shiley*, 794 F.2d at 1568, 230 USPQ at 115; *Hammerquist v. Clarke's Sheet Metal, Inc.*, 658 F.2d 1319, 1325-26, 212 USPQ 481, 486 (9th Cir. 1981), *cert. denied*, 460 U.S. 1052 (1983). When trial is had to a jury, the issue should be decided by the jury.

We remand for this purpose. The jury's findings on the issue of willfulness will be pertinent not only to the question of multiplication of damages under 35 U.S.C. §284, but also to determination of whether this is an exceptional case in terms of 35 U.S.C. §285. Entitlement under California Civil Code §3426 may also be considered.

X
Other Arguments

Both sides have raised many points in their briefs, disputing most aspects of the proceedings. We have considered all arguments in reaching our conclusions.

Costs

[15] The award by the trial court of only one third costs to Richardson, in view of the judgments in his favor on the major substantive issues, exceeded the trial court's discretionary authority. Richardson is entitled to his statutory costs incurred before the district court. The reduction thereof is reversed.

Costs on this appeal are taxed in favor of Richardson.

AFFIRMED IN PART, REVERSED IN PART, VACATED IN PART, AND REMANDED.

Pennsylvania Superior Court

Den-Tal-Ez Inc. v. Siemens Capital Corp.

No. 02312 Philadelphia 1987

Decided October 21, 1988

TRADEMARKS AND UNFAIR TRADE PRACTICES

1. Trade secrets — In general (§400.01)

Mutual non-disclosure agreement, executed between plaintiff dental handpiece company and defendant that was negotiating to acquire plaintiff, which requires confidential information to be so marked but which does not define "confidential" information as limited only to information that is marked does not therefore limit its protections only to information marked "confidential."

2. Unfair competition — In general (§395.01)

Trade secrets — In general (§400.01)

Execution of confidentiality agreement does not thereby constitute implied waiver of common law protections against misappropriation of trade secrets.

3. Trade secrets — In general (§400.01)

Starting point under Pennsylvania law for determining whether alleged misappropriation of trade secret occurred is not whether confidential relationship existed but whether, in fact, trade secret existed which could be misappropriated, since Pennsylvania follows "property" view of trade secrets which shifts emphasis from whether defendant's conduct conformed to its confidential relationship with plaintiff to close analysis of whether information was trade secret.

4. Trade secrets — Elements of trade secret (§400.03)

Concept of trade secret is somewhat nebulous, although crucial indicia appear to be substantial secrecy and competitive value to owner, and under Pennsylvania law particular character of information sought to be protected is not relevant.

5. Trade secrets — Elements of trade secret (§400.03)

Information regarding company's material suppliers is not trade secret, since it can readily be learned, but information regarding inventory data and projections, detailed unit costs, and product-by-product profit margin data is protectible as trade secret.

6. Unfair competition — State statutes and common law (§395.03)

Defendant's failure, while negotiating to purchase plaintiff company and while obtaining confidential business information from plaintiff, to disclose to plaintiff its continued interest in acquiring plaintiff's competitor is actionable under Pennsylvania law, even if such information does not rise to level of trade secret.

7. Trade secrets — In general (§400.01)

Unfair competition — In general (§395.01)

REMEDIES

Non-monetary and injunctive — Equitable relief — Permanent injunctions (§505.0709)

Injunction barring defendant, which had obtained confidential commercial information from plaintiff during course of negotiations to purchase plaintiff and which failed to disclose to plaintiff its continued interest in purchasing plaintiff's competitor, from acquiring competitor for three years is warranted, in view of evidence demonstrating substantial threat that defendant would disclose plaintiff's information to competitor if acquisition were consummated, demonstrating that resulting injury to plaintiff could not be adequately remedied through award of damages, and demonstrating that usefulness of information can reasonably be anticipated to dissipate after three years.

Appeal from Pennsylvania Court of Common Pleas, Philadelphia County.

Den-Tal-Ez Inc. and its subsidiary Star Dental Manufacturing Co. Inc. brought unfair competition and misappropriation of business information action against Siemens AG and its subsidiaries Siemens Capital Corp., and Pelton & Crane Co. From trial court's entry of preliminary and permanent injunctive relief, defendants appeal. Affirmed; Cavanaugh, J., dissenting in separate opinion.

Arlin M. Adams, Philadelphia, Pa., for plaintiffs-appellees.

Stewart Dalzell, Philadelphia, for defendants-appellants.

Before Cavanaugh, Beck, and Hester, judges.

Beck, J.

In this appeal, we are asked to decide numerous questions, all generally relating to the propriety of the trial court's entry of preliminary and permanent injunctions barring appellants from acquiring a competitor of appellees for three years. The purpose of the injunctions is the prevention of disclosure or other use by appellants of allegedly confidential business information regarding appellees' business. This information was obtained by appellants during ultimately unsuccessful negotiations between appellants and appellees regarding the sale of appellees' business to appellants.

The factual scenario giving rise to this appeal is complex. Our review of the record, limited as it is by our narrow standard of review in injunction matters, reveals that the chancellor's findings of fact are clearly supported by competent evidence. Thus, we accept those findings as adequately representing the facts of this case and provide the following summary thereof.

Plaintiffs-appellees are Den-Tal-Ez, Inc. and its subsidiary, Star Dental Manufacturing Company, both of which are American companies (hereinafter collectively referred to as "Star"). Syntex Corporation is the parent of Den-Tal-Ez. Defendants-appellants are Siemens AG (a German company), its subsidiary, Siemens Capital Corporation, and Pelton & Crane Company, an indirect subsidiary of Siemens Capital (hereinafter collectively referred to as "Siemens"). Siemens Capital and Pelton & Crane are both American companies.

Star Dental manufactures and distributes small dental instruments called dental handpieces in the United States. Siemens AG also manufactures dental handpieces and larger dental apparatus, which are largely distributed in the European market. Pelton & Crane manufactures and distributes large dental apparatus in the United States, but does not manufacture or distribute dental handpieces. In addition to the foregoing par-

APPENDIX D

US005740549A

United States Patent [19]

Reilly et al.

[11] Patent Number: 5,740,549

[45] Date of Patent: Apr. 14, 1998

[54] **INFORMATION AND ADVERTISING DISTRIBUTION SYSTEM AND METHOD**

[75] Inventors: **James P. Reilly**, San Francisco; **Gregory P. Hassett**, Cupertino, both of Calif.

[73] Assignee: **PointCast, Inc.**, Sunnyvale, Calif.

[21] Appl. No.: **489,591**

[22] Filed: **Jun. 12, 1995**

[51] **Int. Cl.**[6] **G06F 17/60**

[52] **U.S. Cl.** **705/14**

[58] **Field of Search** 395/214, 200.09, 395/200.11, 200.15, 602, 604; 705/1, 14

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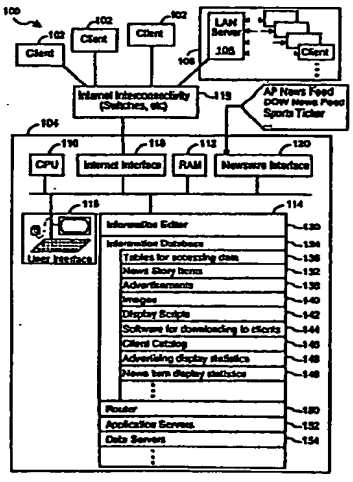
Primary Examiner—Gail O. Hayes
Assistant Examiner—William N. Hughet
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman LLP

[57] **ABSTRACT**

In summary, the present invention is an information and advertising distribution system. A data server stores and updates a database of information items and advertisements. The information items and advertisements are each categorized so that each has an associated information category. Workstations remotely located from the data server each include a display device, a communication interface for receiving at least a subset of the information items and advertisements in the data server's database and local memory for storing the information items and advertisements received from the data server. An information administrator in each workstation establishes communication with the data server from time to time so as to update the information items and advertisements stored in local memory with at least a subset of the information items and advertisements stored by the data server. An information display controller in each workstation displays on the workstation's display device at least a subset of the information items and advertisements stored in local memory when the workstation meets predefined idleness criteria. At least a subset of the workstations include a profiler for storing subscriber profile data. The subscriber profile data represents subscriber information viewing preferences, indicating information categories for which the subscriber does and does not want to view information items. The information display controller includes a filter for excluding from the information items displayed on the display device those information items inconsistent with the subscriber profile data.

20 Claims, 10 Drawing Sheets



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2 281 434	3/1995	United Kingdom .
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WO 93/19427	9/1993	WIPO .
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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 5,740,549
DATED : April 14, 1998
INVENTOR(S) : Reilly et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 10 at line 47 delete "NextilL" and insert --NextHL--

Signed and Sealed this

Thirteenth Day of October 1998

Attest:

BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks

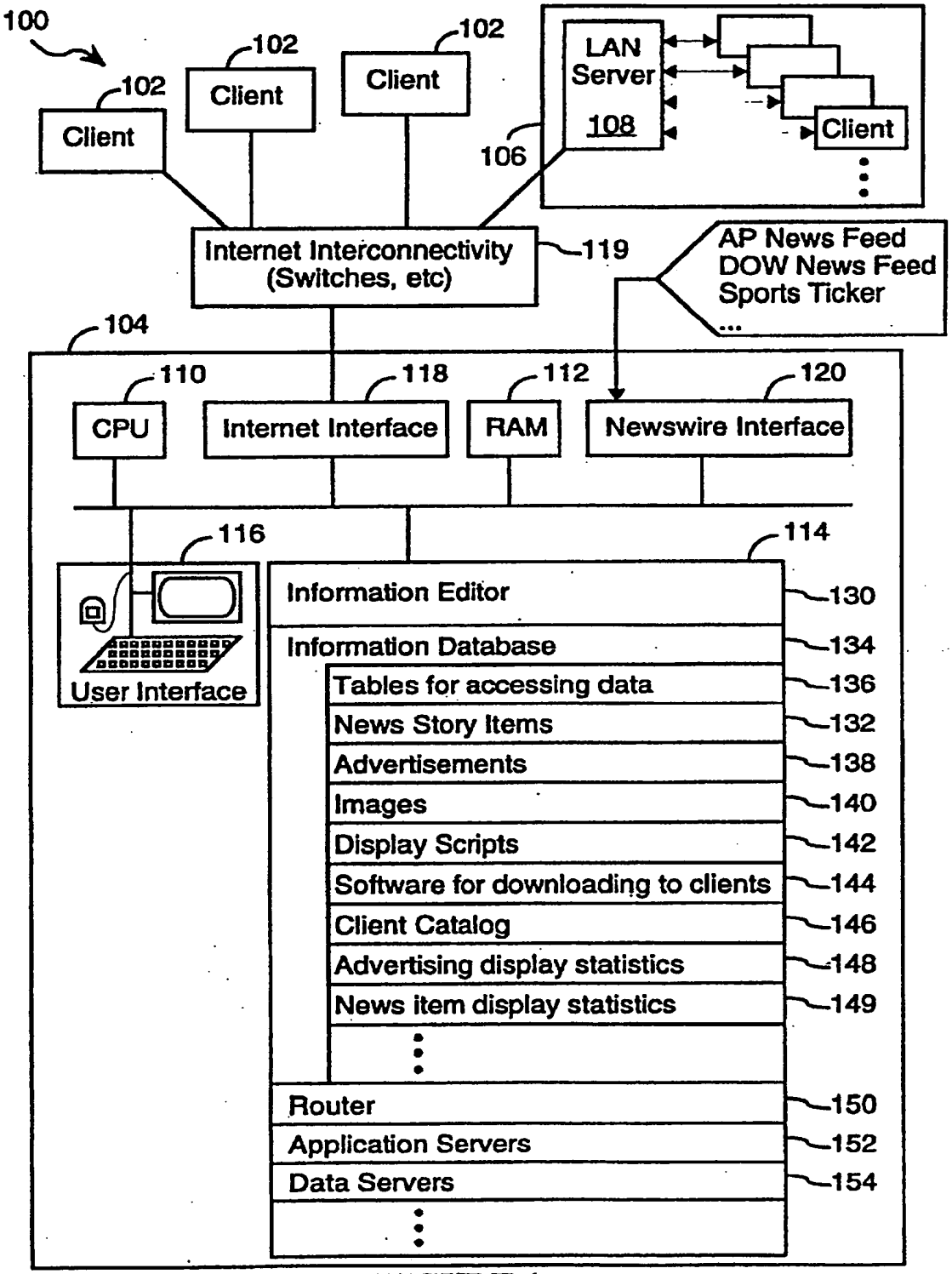
100
102
Client
102
Client
102
Client
LAN
Server
108
Client
106
Internet Interconnectivity
(Switches, etc)
119
AP News Feed
DOW News Feed
Sports Ticker
...
104
110
CPU
118
Internet Interface
112
RAM
120
Newswire Interface
116
User Interface
114
Information Editor
130
Information Database
134
Tables for accessing data
136
News Story Items
132
Advertisements
138
Images
140
Display Scripts
142
Software for downloading to clients
144
Client Catalog
146
Advertising display statistics
148
News item display statistics
149
Router
150
Application Servers
152
Data Servers
154

FIGURE 1

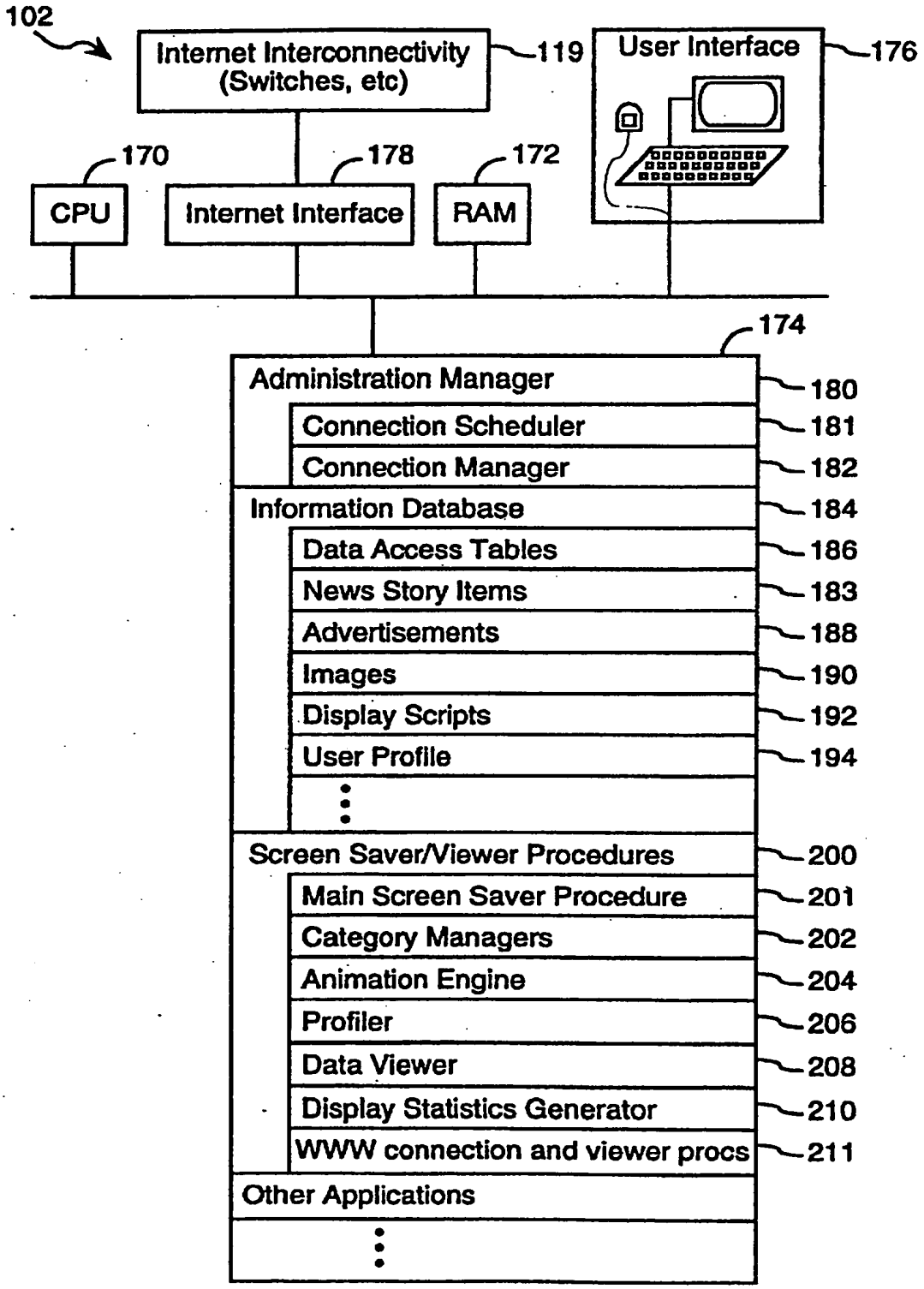
102
Internet Interconnectivity (Switches, etc)
119
User Interface
176
170
178
172
CPU
Internet Interface
RAM
174
Administration Manager
180
Connection Scheduler
181
Connection Manager
182
Information Database
184
Data Access Tables
186
News Story Items
183
Advertisements
188
Images
190
Display Scripts
192
User Profile
194
Screen Saver/Viewer Procedures
200
Main Screen Saver Procedure
201
Category Managers
202
Animation Engine
204
Profiler
206
Data Viewer
208
Display Statistics Generator
210
WWW connection and viewer procs
211
Other Applications

FIGURE 2

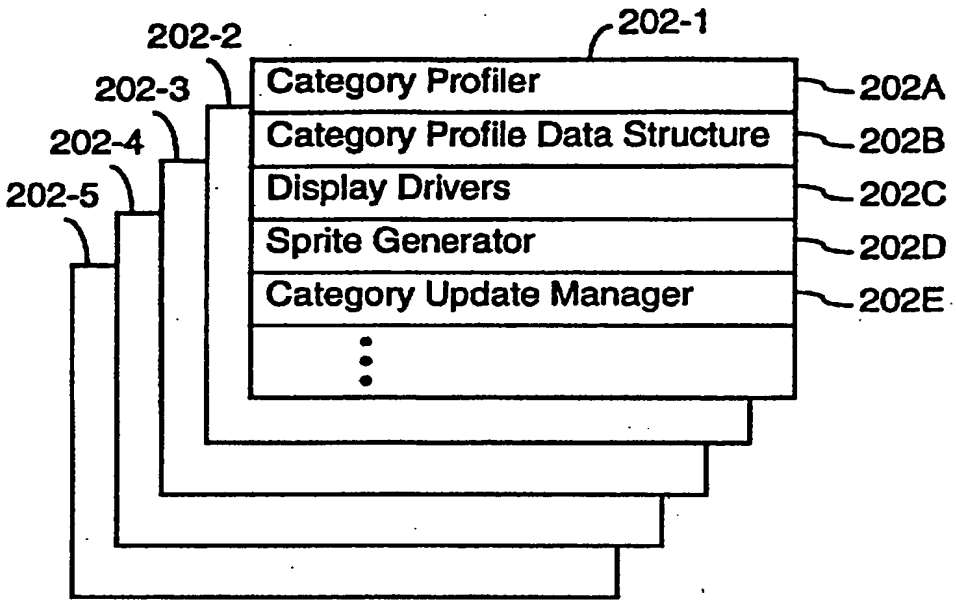

FIGURE 3

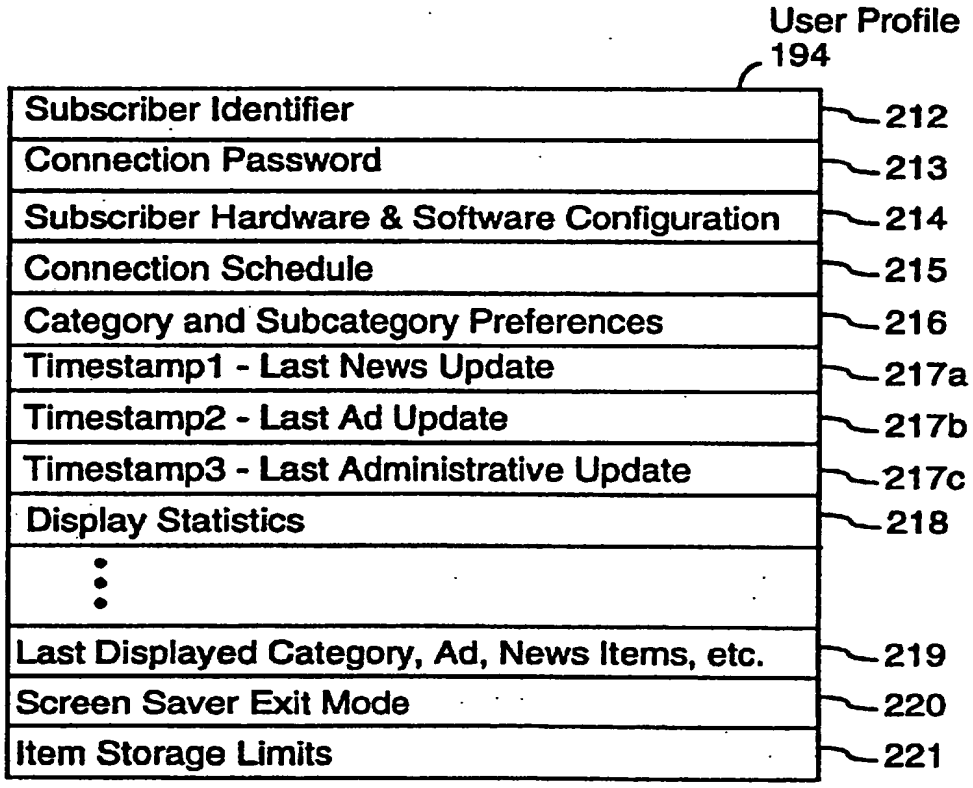

FIGURE 4

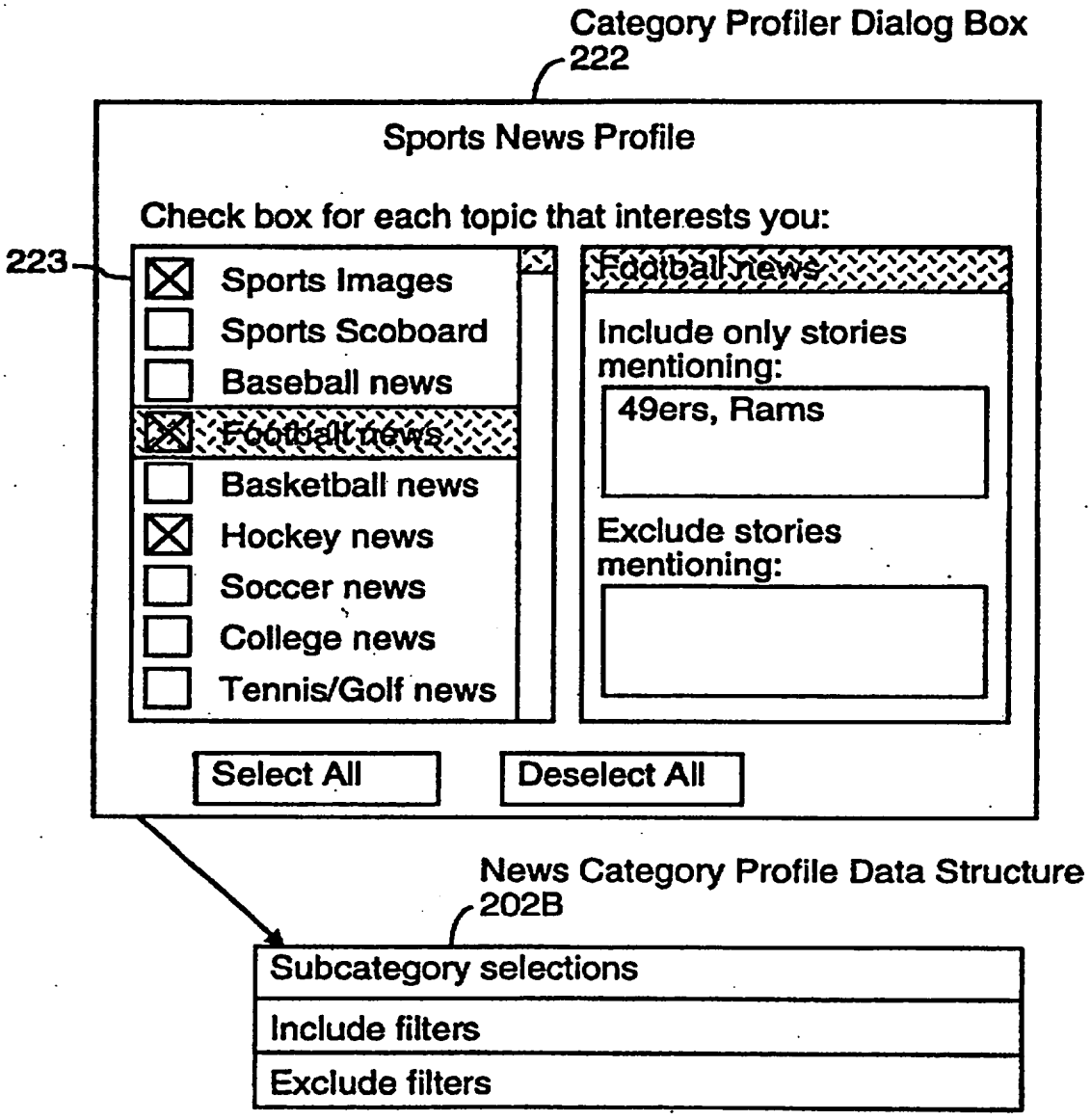
Category Profiler Dialog Box
222
Sports News Profile
Check box for each topic that interests you:
223
Sports Images
Sports Scoboard
Baseball news
Football news
Basketball news
Hockey news
Soccer news
College news
Tennis/Golf news
Football news
Include only stories mentioning:
49ers, Rams
Exclude stories mentioning:
Select All
Deselect All
News Category Profile Data Structure
202B
Subcategory selections
Include filters
Exclude filters

FIGURE 5

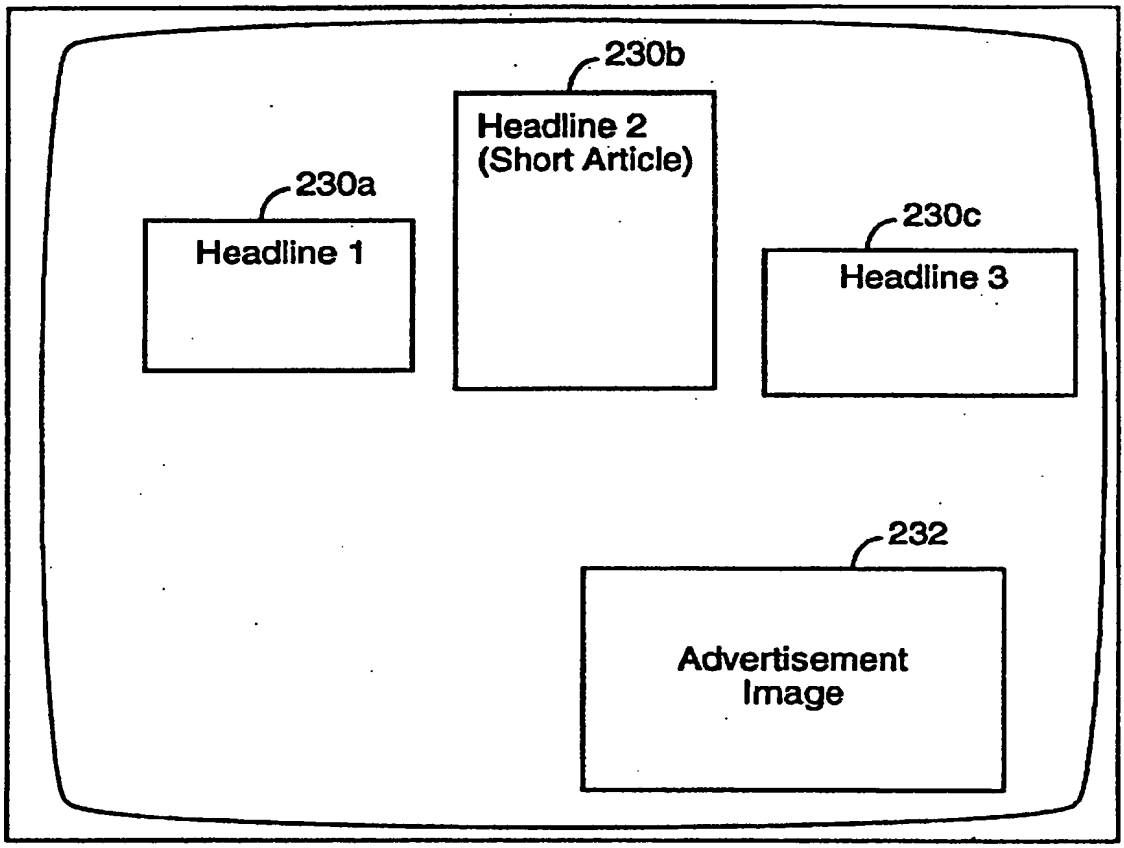
230b
Headline 2
(Short Article)
230a
Headline 1
230c
Headline 3
232
Advertisement
Image

FIGURE 6

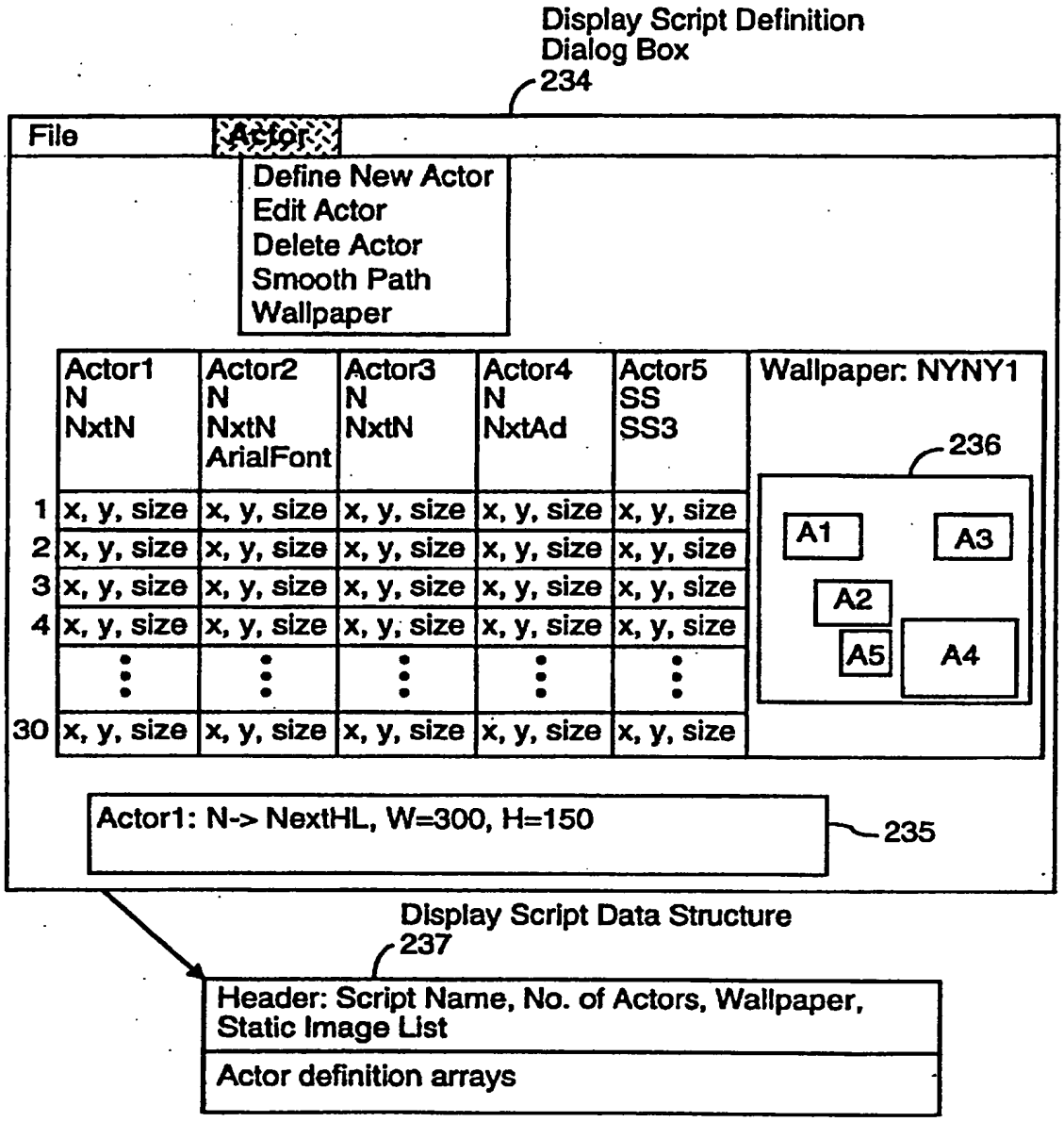

FIGURE 7A

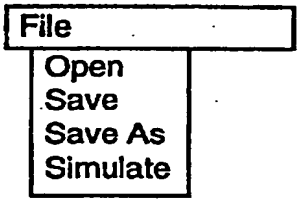

FIGURE 7B

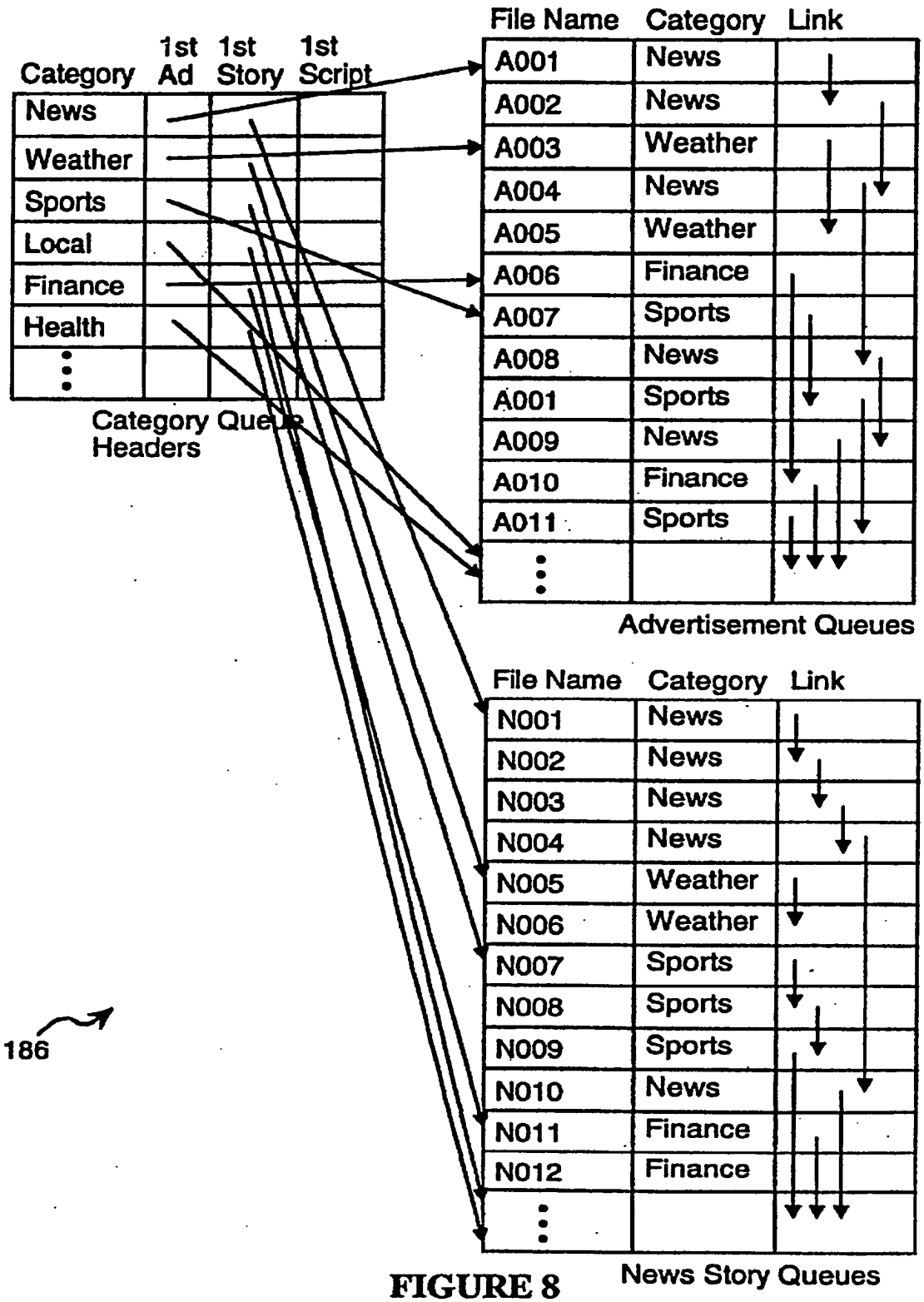
Category
1st Ad
1st Story
1st Script
News
Weather
Sports
Local
Finance
Health
Category Queue Headers
File Name
Category
Link
A001 News
A002 News
A003 Weather
A004 News
A005 Weather
A006 Finance
A007 Sports
A008 News
A001 Sports
A009 News
A010 Finance
A011 Sports
Advertisement Queues
File Name
Category
Link
N001 News
N002 News
N003 News
N004 News
N005 Weather
N006 Weather
N007 Sports
N008 Sports
N009 Sports
N010 News
N011 Finance
N012 Finance
News Story Queues
186

FIGURE 8

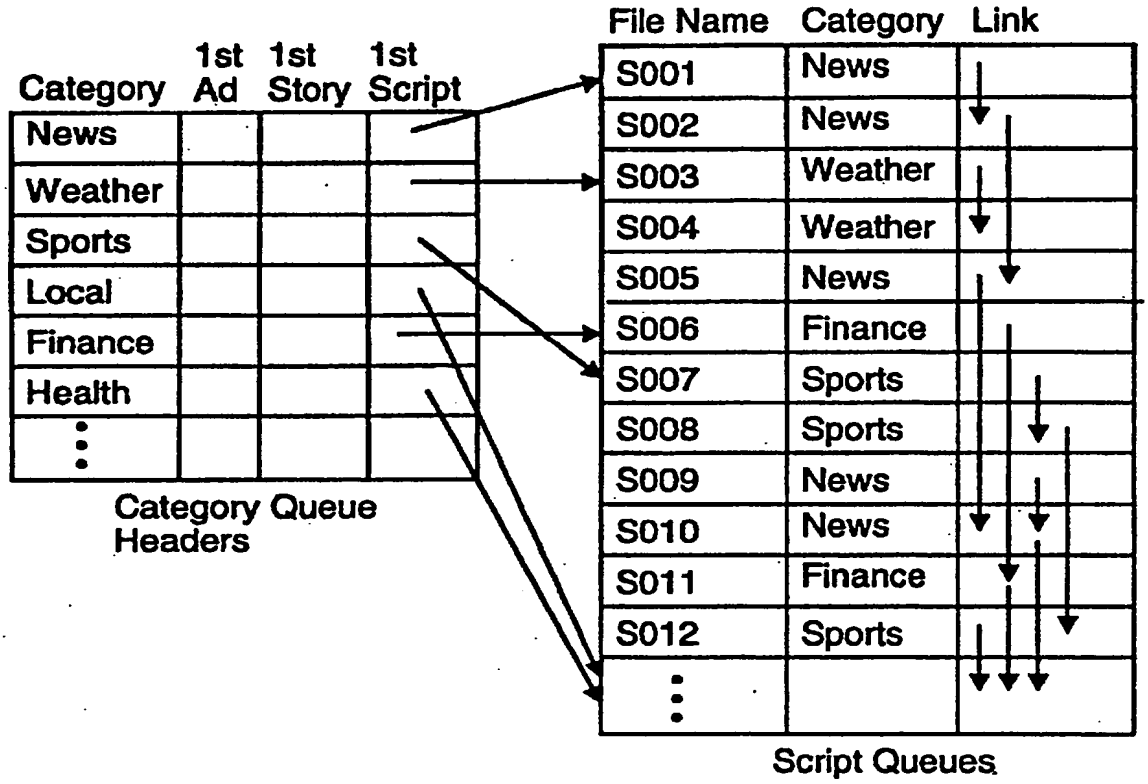
Category
1st Ad
1st Story
1st Script
News
Weather
Sports
Local
Finance
Health
Category Queue Headers
File Name
Category
Link
S001 News
S002 News
S003 Weather
S004 Weather
S005 News
S006 Finance
S007 Sports
S008 Sports
S009 News
S010 News
S011 Finance
S012 Sports
Script Queues

FIGURE 9

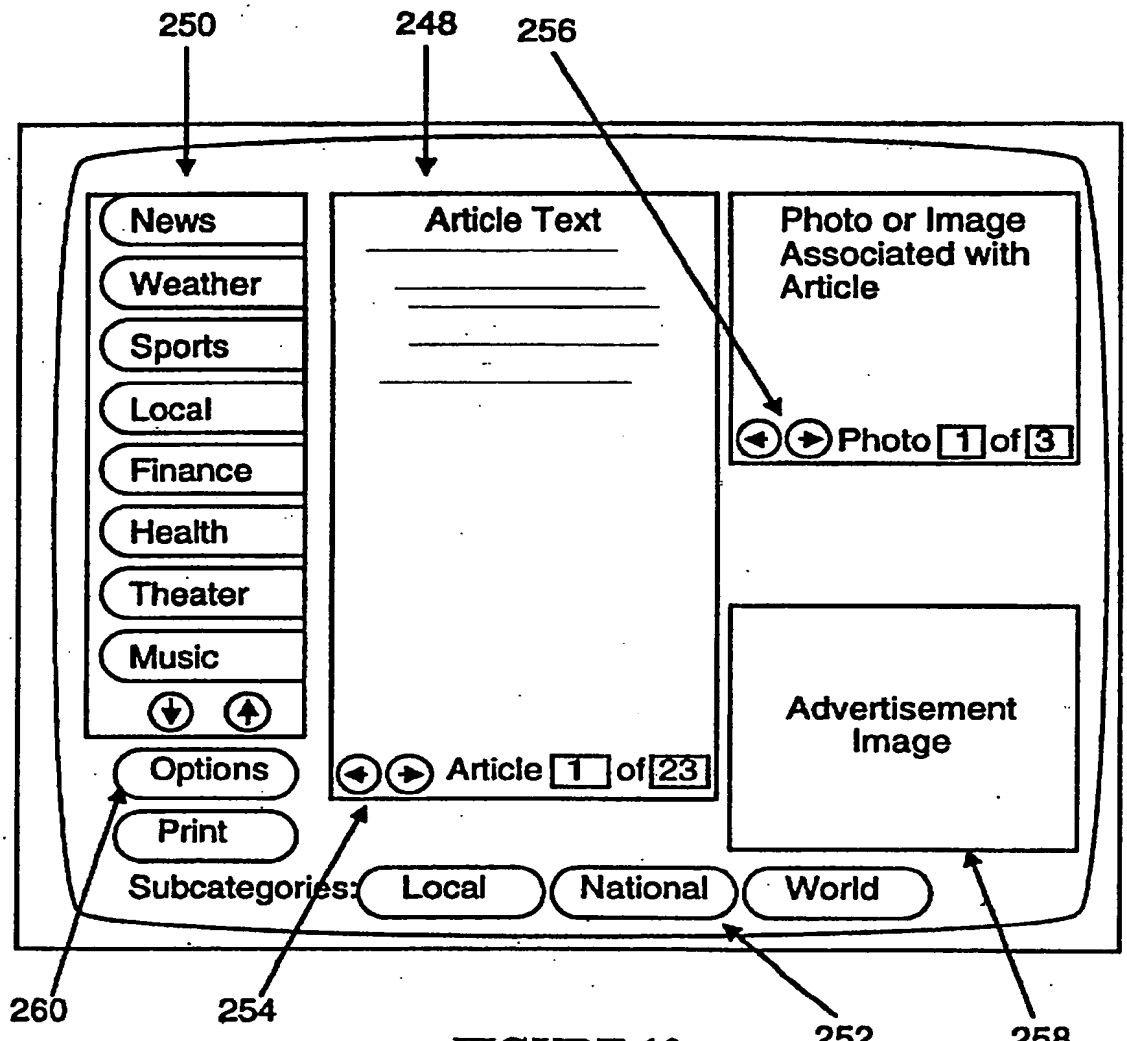
250
248
256
News
Weather
Sports
Local
Finance
Health
Theater
Music
Article Text
Photo or Image Associated with Article
Photo 1 of 3
Advertisement Image
Options
Print
Article 1 of 23
Subcategories:
Local
National
World
260
254
252
258

FIGURE 10

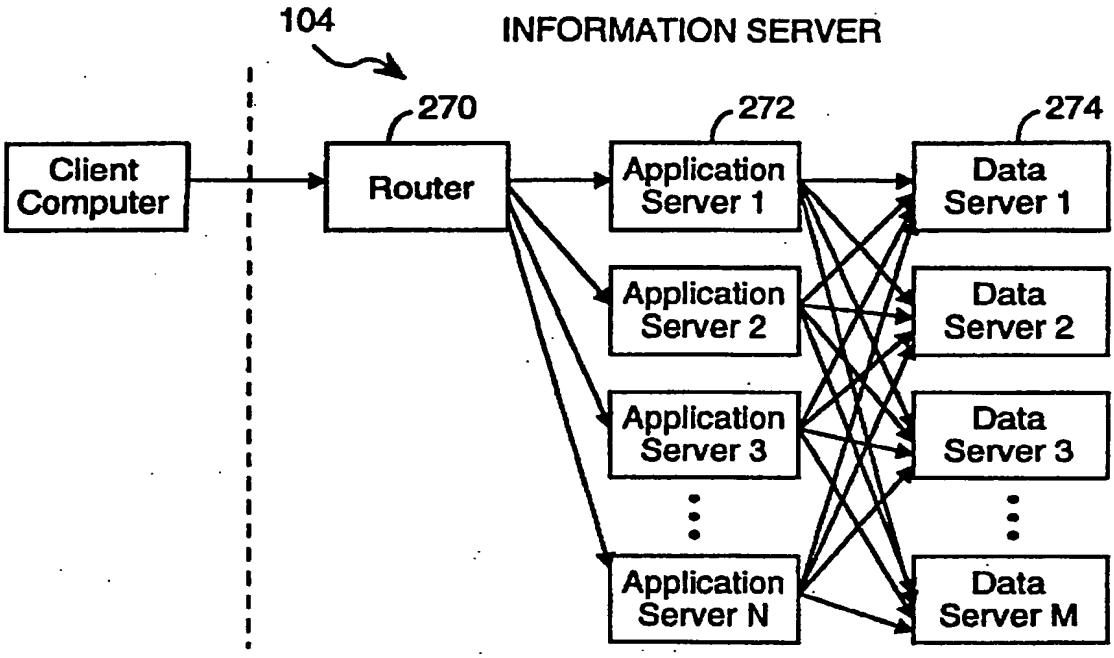

FIGURE 11

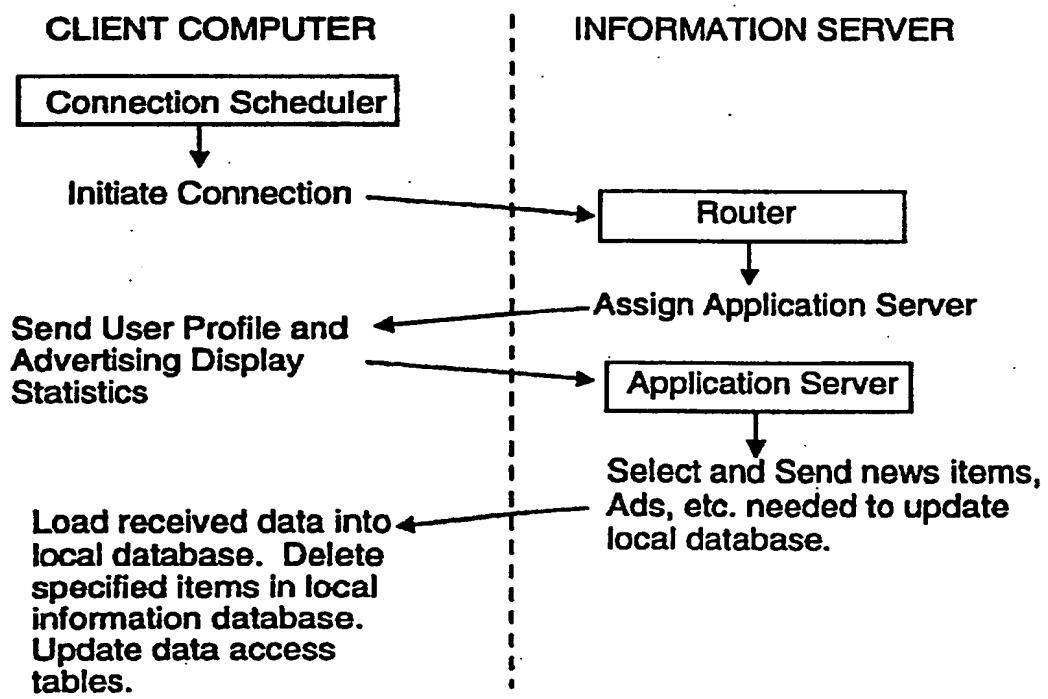

FIGURE 12

INFORMATION AND ADVERTISING DISTRIBUTION SYSTEM AND METHOD

The present invention relates generally to computer based information distribution systems, and particularly to a system for distributing to a set of subscribers' computers information matching each subscriber's interests as well as advertising, and for distributing the information and advertising to each subscriber's computer during time periods in which the subscriber's computer is otherwise inactive.

BACKGROUND OF THE INVENTION

The use of advertising revenues to pay for information dissemination is well established in domains such as television and radio in which end users are tuned to a continuous signal over a lengthy period of time. In such systems, due to the continuous nature of the signal being monitored by the end users, the end users are sufficiently similar to a "captive audience" that many or most end users remain tuned to the same signal even when the main program to which they are listening or viewing is interrupted by advertisements.

Another example of advertising mixed with information dissemination is the use of scrolled text at the bottom of a television of computer screen, where the main program occupies most of the end user's visual field and a smaller portion is occupied by advertisements and the like on a "scroll bar" or similar visual device along the periphery of the screen. In some contexts, such as cable television channels that display a "stock ticker tape," this relationship is reversed: the information portion of the screen occupies a small part of the screen, such as horizontally scrolling image region at the top or bottom of the display and the remainder of the screen is occupied by advertisements, "infomercials" and the like.

Yet another example of mixing advertisements with information dissemination are newspapers and magazines.

Most, and perhaps all such examples of mixing advertisements with information content are based on systems in which the end user has actively elected to view or listen to a program or to otherwise receive information. Furthermore, in virtually all such systems or media, the juxtaposition or placement of advertisements and information content is explicitly programmed or determined by human beings working as "editors" or in a similar content and/or presentation editing capacity.

Up until the present, distributing information via the Internet or other publicly accessible computer communication networks has been largely unsupported by advertising revenues due to the lack of good mechanisms for mixing advertising and information content in such a way as to be acceptable to both end users and advertisers. There are, of course, some exceptions where advertising/content mixtures from other contexts, such as newspapers and television, have been simply replicated on the Internet. For instance, some newspapers have been "published" at least in part on the Internet, and include advertisements along with information content. In fact, some newspapers sell advertising space on an associated World Wide Web (WWW) site, which often includes extensive listings of certain types of advertisements such as real estate advertisements, personal advertisements, and so on. Similarly, the scroll bar type advertisement at the bottom of a computer screen is based on similar advertising techniques used in cable television and other television contexts.

There are also examples of computer programs which contain advertisements. In all such examples known to the inventors, the advertisements are either permanently embedded in the computer programs or reside permanently with computer programs such that they cannot be easily updated.

The present invention addresses a problem prevalent in electronic information distribution systems. In particular, "on line" newspapers and magazines are notoriously difficult and tedious to read. Graphics and animation and full motion video, all techniques widely used in television news programs, require substantial data transmission bandwidth. Such data transmission is expensive both in terms of communications bandwidth (capacity) and time. In non-computer publishing such as printed magazines and newspapers, graphics are often used to make reading less difficult and tedious. In television the majority of information is delivered with movement (animation), although graphics are also often used.

The use of large bandwidth data transmissions is not economically practical in the context of data dissemination via the Internet and other computer networks, although the cost of such data transmissions will undoubtedly continue to decrease. As a result, graphics and animation have typically received relatively little use in computer network based information dissemination systems.

The present invention mixes advertising and information content dissemination in a manner unlike the examples mentioned above.

It is a goal of the present invention to disseminate information and advertisements to subscribers' computers in a system where the information and advertisements are automatically displayed when the subscriber's computer is on but meets predefined idleness criteria. For example, the predefined idleness criteria could be the failure to receive any input for a period of at least five minutes.

Another goal of the present invention is to automatically update each subscriber's local database of news stories at least once per day, and preferably multiple times per day so as to present subscribers with timely information.

Another goal of the present invention is present news stories and advertisements in a dynamic and easy to read manner.

Another goal of the present invention is to categorize news stories and advertisements, and to display advertisements associated with each category at the same time that new stories associated with same category are displayed, thereby providing a "targeted" audience for advertisers.

Another goal of the present invention is provide each subscriber with the ability to set up and change a user profile indicating categories and subcategories of topics which are of interest and not of interest to the subscriber, and to select the news stories displayed on the subscriber's computer accordingly.

Yet another goal of the present invention is to divide news stories into at least two portions, a preliminary portion and a secondary portion, where the preliminary portions of news stories are automatically displayed during idle periods, and the secondary portions are displayed only upon subscriber request.

SUMMARY OF THE INVENTION

In summary, the present invention is an information and advertising distribution system. A information server stores and updates a database of information items and advertisements. The information items and advertisements are each categorized so that each has an associated information category. Workstations remotely located from the informa-

tion server each include a display device, a communication interface for receiving at least a subset of the information items and advertisements in the information server's database and local memory for storing the information items and advertisements received from the information server. An information administrator in each workstation establishes communication with the information server from time to time so as to update the information items and advertisements stored in local memory with at least a subset of the information items and advertisements stored by the information server. An information display controller in each workstation displays on the workstation's display device at least a subset of the information items and advertisements stored in local memory when the workstation meets predefined idleness criteria.

At least a some of the workstations include a profiler for storing subscriber profile data. The subscriber profile data represents subscriber information viewing preferences, indicating information categories for which a subscriber associated with the workstation does and does not want to view information items. The information display controller includes a filter for excluding from the information items displayed on the display device those information items inconsistent with the subscriber profile data.

BRIEF DESCRIPTION OF THE DRAWINGS

Additional objects and features of the invention will be more readily apparent from the following detailed description and appended claims when taken in conjunction with the drawings, in which:

FIG. 1 is a block diagram of an information and advertising distribution system in accordance with the present invention.

FIG. 2 is a block diagram of a subscriber's computer in the information and advertising distribution system of FIG. 1.

FIG. 3 schematically depicts the procedures and data structures in a set of category managers.

FIG. 4 schematically depicts a user profile data structure stored in a subscriber's computer to store status and configuration information for a particular subscriber and workstation.

FIG. 5 schematically depicts the dialog box used to define the user profile for one information category.

FIG. 6 schematically depicts display generated on a subscriber's display device using the screen saver procedure in a preferred embodiment of the present invention.

FIGS. 7A and 7B schematically depicts the dialog box used to define a display script and the resulting data structure.

FIG. 8 and 9 schematically depict data structures stored in a subscriber's computer to indicate advertisements and news stories available for display in various information categories.

FIG. 10 schematically depicts a display generated on a subscriber's display device using a data viewer procedure in a preferred embodiment of the present invention.

FIG. 11 depicts the relationships between various processes in the information server.

FIG. 12 is a flow chart depicting the procedure for updating the local database and software modules of a subscriber's computer.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIG. 1, there is shown a computer based information and advertising distribution system **100** having many client computers **102** and at least one information server computer **104**. Client computers are often called "subscribers'computers" in the present document, and the terms "subscriber computer" and "client computer" will be used synonymously. In many instances, a set of subscribers **102** will be located within a common local area network (LAN) **106**, and are connected to a LAN server **108**.

In the preferred embodiment, each subscriber's computer **102** is connected to the information server **104** via the Internet **119** for a small fraction of each day. Other forms of electronic communication connections, including private wide area networks similar to CompuServe, America OnLine or Prodigy, can be used to connect subscribers' computers to the information server **104** in alternate embodiments of the invention.

While most client computers are desktop computers, such as IBM compatible computers and Macintosh computers, virtually any type of computer can be a client computer so long as it can support the "screen saver" mode of operation of the preferred embodiment.

Information Server

The information server **104** includes a central processing unit **110**, primary memory **112** (i.e., fast random access memory) and secondary memory **114** (typically disk storage), a user interface **116**, an Internet interface **118** for communication with the client computers **102** via the Internet **119**, and one or more news wire interfaces **120** for receiving news feeds from information transmission services such as the AP news feed, the DOW news feed and various sports news feeds. An information editor **130** is used, typically under the direction of a person using the user interface **116**, to select news stories received from the new feeds and to edit and format the news stories into a form suitable to dissemination to subscribers' computers using the present invention. The selected and edited news stories **132** are stored in an information database **134** in the information server **104**.

In the preferred embodiment, the information editor **130** is used to assign each news story to an information category and, where appropriate, to also assign the news story to one or more sub-categories. The information editor maintains a list of the currently defined categories and sub-categories. The category list can be updated by the personnel operating the information server, typically to add and delete special new categories associated with major news events such as a famous trial or event which generates many news stories. The category to which each news story is assigned is represented in one or more Data Access Tables **136**.

The information editor **130** is also used to divide most news stories into two components or portions: a primary component or portion and a secondary component or portion. The primary component is what is displayed on a subscriber's workstation when the subscriber's workstation is turned on but has been idle, while the secondary component is what is displayed, along with the primary components only upon a subscriber's request. For instance, as will be described below, there are number of ways in which a subscriber can request the display of the "full text" of a news item (which may include photographs and the like). For convenience, the primary component of each news story is sometimes herein called the "headline", even though it will often contain more information than just the headline of the news item, and the secondary component of each news story will sometimes be called the "body."

Advertisements **138** are also stored in the information database **134** and each advertisement is assigned to at least

one of the predefined information categories. Each advertisement is displayed on subscribers' workstations simultaneously with news items assigned to the same category as the advertisement. When an advertisement is assigned to multiple categories, it is treated in most respects as several advertisements each assigned to one category, except that only one copy of the advertisement is actually stored.

Next, the information database in the server computer includes a set of images **140** used during the display of news items and advertisements. For instance, different "wallpaper" or background images may be useful when displaying news items in various types of information categories. As an example, the images **140** include three fixed images for indicating that the stock market has risen, fallen or stayed largely unchanged. Then, depending on what has happened to the stock market on any particular day, information concerning the amount of change in the stock market during the relevant time period, and sometimes other associated information, is superimposed on a selected one of those fixed images. Other images stored in the information database include various "actors" that can be moved around the display with the news items when the system is in screen saver mode.

The information database **134** also stores a set of "display scripts" **142**. A script controls the display of news items and advertisements, typically displaying a selected number of news items and one advertisement for a period of 30 seconds. A script determines the number of news items displayed, determines the positions of the news items and advertisement on the display, determines any movement of the news items around the displayed image, and determines what background image or images are displayed in conjunction with the news items.

An important concept associated with the present invention is that constantly varying the presentation of news items and advertisements, through the use of a rotating set of scripts, makes it easier for subscribers to read the news headlines and advertisements being presented. In a preferred embodiment, at least two distinct scripts, and preferably three or more distinct scripts are provided for most information categories, with a total of at least ten different scripts being used. Most scripts can be used with multiple categories of news items. The procedure for defining display scripts and the associated data structure are described below with reference to FIG. 7A.

The information database **134** also stores software modules **144** for downloading to subscribers' computers. The information administration management procedures and information viewing procedures in subscribers' computers will need updating and upgrading from time to time. The new versions of these software procedures are stored in the information server's information database **134** for downloading into the computers of subscribers at the same time that the information items or advertisements in the subscriber computers' information database **184** is updated. Since numerous types of subscriber computers are supported, the server's information database **134** will typically store a set of updated software modules for each of the supported types of computers.

Finally, the information database **134** includes advertising display statistics **148** and news item display statistics **149**. The display statistics are collected from the subscribers' computers when the subscribers' computers call in for updated news stories and the like. Advertising display statistics indicate how many times each advertisement has been displayed on subscribers' computers. In a preferred embodiment, display statistics for each advertisement are divided into a display count for displaying during data viewer usage, a display count for other display instances, and an indication of each advertisement the user has interacted with, such as by "clicking" on the advertisement to connect to the advertiser's World Wide Web page. News item display statistics **149** concern how much time the subscriber spent viewing each non-advertising item in the data viewer as well as the amount of time the screen saver was active for each information category.

Other procedures stored in the information server's secondary memory are a router procedure **150**, application server procedures **152**, and data server procedures **154**. The utility of these procedures is explained below with reference to FIGS. **8** and **9**.

Subscriber's Workstation

FIG. **2** is a schematic representation of the subscriber's workstation or computer **102** that is not connected to the information server **104** via a LAN server. For subscribers' workstations connected to the information server **104** via a LAN server **108**, FIG. **2** is representative of the LAN server, but the display device used by each such subscriber's computer to view news items and advertisements is part of the subscriber's workstation rather than the LAN server **108**.

The subscriber workstation **102** includes a central processing unit **170**, primary memory **172** (i.e., fast random access memory) and secondary memory **174** (typically disk storage), a user interface **176**, and an Internet interface **178** for communication with the information server **104** via the Internet **119**. In this document, whenever the phrase "clicking on X" is used, that phrase means a subscriber selecting the X image on a display device by positioning a pointer image over the X image, using the subscriber computer's, mouse or trackball device, and then depressing a button or key to indicate selection of the X image.

An administration manager **180** schedules and controls all communications with the information server **104**. The administration manager **180** includes a connection scheduler **181** that initiates the execution of a connection manager **182** that handles communications with the information server as well as the integration of information and software procedures received from the information server into the information and software procedures stored in the client computer.

The workstation's secondary memory is used to store a local information database **184** that includes news stories **183**, advertisements **188**, images **190** and display scripts **192**. In each case the workstation's secondary memory stores at least a subset of the corresponding items stored in the information server **104**. The amount of information stored in the workstation's secondary memory depends on the amount of secondary memory available for storing such information, as well as a user profile **194** for the subscriber that indicates which categories and subcategories of news stories are of interest to the subscriber.

Data Access Tables **186**, which are discussed in more detail below with reference to FIGS. **5** and **6**, are used to access news stories, advertisements and display scripts associated with each of the categories of news items that are to be displayed on the subscriber's workstation.

Screen Saver and Viewer Procedures **200** are a set of procedures for controlling the display of news stories and advertisements. These procedures include a main screen saver procedure **201**, category managers **202**, an animation engine **204**, a profiler **206**, a data viewer **208** and an advertisement display statistics generator **210**.

Each of the category managers **202** is a collection of programs and data associated with particular information categories. In the preferred embodiment there is a separate category manager for each information category, although in some cases it may be more efficient to use the same category manager for two or more information categories.

Referring to FIG. **3**, each category manager **202** includes a category profiler **202A**, a category profile data structure **202B**, one or more display drivers **202C** for viewing items in the corresponding information category with the data viewer, a sprite generator **202D** generating images displayed by the screen saver procedure, and an update manager **202E**.

The category profiler in each category presents a category profile dialog to the subscriber to determine the subscriber's interest in receiving information relating to particular subcategories. Subcategories may relate to specific companies, geographic regions, specific sports and sports teams, and so on, depending on the category. The result of the decisions made by the subscriber during the category profile dialog is stored as a category profile data structure.

The update manager in each category handles the process of updating the local information database with new items from the information server for that information category as well as the deletion of all items and the rebuilding of the portion of the data access tables used to control access to the information items, advertisements and display scripts in that information category.

The display drivers in each category manager are customized to generate images specifically needed in the corresponding categories. For instance, in the category manager for the sports category, the display driver includes instructions for generating a simulated scoreboard which is automatically updated every few seconds to show a sequence of game scores or contest outcomes in various sporting events. In another example, the display driver for the weather category includes instructions specifically designed for efficiently displaying weather maps and other weather information.

Referring once again to FIG. **2**, the animation engine **204** interprets a currently selected display script and controls the display of a selected set of news stories and an advertisement in accordance with the instructions in the currently selected display script.

The profiler **206** is actually a set of procedures that define and update the subscriber's user profile **194**. Referring to FIG. **4**, in the preferred embodiment, the user profile **194** includes:

- a subscriber identifier **212**;
- a connection password **213** used in conjunction with the subscriber identifier when connecting to the information server to identify the calling computer as a registered subscriber;
- subscriber hardware and software configuration information **214** that identifies for the information server hardware and software information needed to determine the type of software and image files that are compatible with the subscriber's computer;
- a connection schedule **215** that specifies to the connection scheduler **181** within the administrative manager **180** how often the subscriber's computer should connect to the information server **104** to update its information database **184**;
- category and subcategory preferences information **216** that identifies categories and subcategories of news stories that the subscriber does not want to view, as well as a list of "special categories" of news stories of special interest to the subscriber which override any categories noted as not being of interest to the subscriber;
- timestamps **217***a*–**217***c* indicating the time of the last updates to the subscriber computer's locally stored set of news stories, advertisements and administrative files (including scripts, images and software modules);
- advertising and news item display statistics **218**;
- screen saver information **219** indicating the last displayed information category and the last displayed advertisement and news items in each information category are stored in a portion of the user profile **194** not transmitted to the information server; and
- a screen saver exit mode indicator **220**, indicating what actions cause the screen saver procedure to terminate and what actions cause the data viewer **208** to be executed.

The default connection schedule is for the subscriber's computer to initiate a connection to the information server once during the middle of the night (e.g., a randomly selected time between 11 p.m. and 7 a.m. local time) for an "administrative update," and once every four hours during the rest of the day for "news story updates." During the administrative update connection, the set of advertisements, scripts and images in the subscriber computer's local information database are updated as necessary, and any software upgrades are also downloaded onto the subscriber's computer. During both "administrative update" and "news story update" connections, the news stories in the subscriber computer's local information database are updated. At the option of the information server's system operator, script and/or software updates can be made during "news story update" connections, especially when a malfunction has been detected in previously distributed scripts or software.

In one preferred embodiment, the profiler **206** can be used to specify a connection schedule other than the default schedule. For instance, if the subscriber's computer is typically turned off at night, the administrative update connection may be scheduled to occur (A) during the subscriber's typical lunch time, or (B) once per day when the subscriber's computer has not received any user input for a specified minimum period of time (e.g., ten minutes) that indicates the subscriber is away from his/her computer.

The downloading of advertisements (which are typically images), fixed images used by display scripts, and software modules is preferably performed during the night or long periods of user inactivity because images and software modules are typically much larger than the news items, which are primarily text data. Images, including advertisements, and software modules are compressed using well known data compression techniques to make the download transmissions as time efficient as possible. Even so, downloading images is a time consuming process. For instance, downloading two high resolution advertisement images having pixel sizes of, say, 400×300 pixels each, even when using data compression, will typically take over two minutes using conventional 14.4 K baud modems. By way of contrast, downloading a dozen news stories and corresponding database base update instructions will typically take less than fifteen seconds of connection time using conventional 14.4 K baud modems. Therefore, updating the local database's set of news items can be accomplished relatively unobtrusively even while the subscriber is using his/her workstation, while updates to the advertisements and fixed images in the local database take longer and are therefore more intrusive.

It is noted that the secondary portions of news items can also include images, such as photographs that accompany the text of a news story. The transmission of such news story images can significantly increase the amount of connection time required for news item updates, and thus most news stories in the preferred embodiment do not use images, and every effort is made to transmit those news stories that have images to subscribers' computers during the overnight administrative update rather than during the daytime news item updates.

The data viewer **208** is a program for viewing news items that the subscriber specifically wants to read. The data viewer **208** can be executed at the subscriber's explicit command, and can also be launched from the screen saver if the, user indicates he/she wants to read a news story shown in the screen saver display. This is explained in more detail below.

The display statistics generator **210** keeps tracks of how many times each advertisement in the local information database has been displayed since the last time advertisement display statistics have been transferred to the information server. The display statistics generator **210** also keeps track of how many times each news item has been displayed in the same time period. These display statistics are stored in the user profile **194** at **218**. In the preferred embodiment, the advertisement display statistics, and news items display statistics, are transferred to the information server once per day during a connection also used to update the subscriber computer's information database. In alternate embodiments, the advertisement display statistics could be transferred more often (e.g., every time the subscriber's computer connects to the information server) or less often (e.g., once per week).

Category Profiler Dialog

As mentioned earlier, each of the category managers includes a profiler procedure for defining the subscriber's interest in receiving news items within each information category. An example of the profile definition dialog generated by a category profiler, for the Sports category, is shown in FIG. **5**. In this example, the Sports Definition Profile dialog box **222** includes, on the left side, a scroll box **223** in which the user can select and deselect subcategories of sports information by clicking on boxes next to the listed subcategories. A "Select All" button in the dialog box can be used (i.e., by clicking the subscriber computer's mouse or trackball device on the image of the box) to select all subcategories, and a "Deselect All" button can be used to indicate that the subscriber does not want to receive any news items for the Sports category. For each subcategory, either an "include only" or an "exclude" filter (but not both) can be defined where the user types in key words to be used to select (for the include only) or deselect news items within that subcategory. For instance, if the subscriber types in the words "49ers, Rams" in the box for the include only filter for the "football news" subcategory, only news items using either of those words will be shown to the subscriber.

The category manager profile procedure generates a category profile data structure **202B** that represents the subcategories of interest to the subscriber as well as any associated filters that have been defined.

Display Script Definition Procedure

Referring to FIG. **6**, there is shown in outline form a snapshot of typical display generated by the screen saver procedure of the present invention. On this particular exemplary display are shown three news story "headlines" **230***a*–**232***c* and one advertisement image **232**. Each of the headlines **230** is an image representing the text of the "primary component" of a news items, as explained above. While the image shown in FIG. **6** appears static, in the preferred embodiment the display script that controls the display of the headlines and advertisement can and most often does contain instructions for continuously moving the headline images around the screen.

The display scripts also mix fixed images with the headline images to create varied and interesting displays. In one example of a display script, cartoon characters appear to move the headlines around. In another example of display script, the background behind and surrounding the headlines is a sequence of fixed images such as pictures of peaceful landscapes, while the headlines gently float around the portions of the display not occupied by the advertisement image **232**.

Referring to FIG. **7**A, the preferred embodiment provides an easy to use dialog **234** for display script definition. A display script consists of definitions for two or more actors, plus an optional definition of a background image, called the wallpaper image. Each "actor" represents a sprite, which is a displayable image, that can move around the screen and whose size can vary dynamically. An new actor is initially defined by selecting the "new actor" command in the Actor menu, as shown in FIG. **7**A, and then entering a text string (shown in box **235**) that specifies (A) the sprite generator procedure to use to generate the image for the actor, (B) the source of the information to be displayed, (C) the nominal width and height of the sprite (e.g., in units of pixels), and (D) any optional parameters that are specific to the specified sprite generator (e.g., a font may be specified for the News information category's sprite generator, whereas a font designation parameter may be meaningless for other ones of the sprite generators).

In the preferred embodiment, the specified sprite generator must be either the static sprite generator that is part of the animation engine **204**, or is any specified one of the sprite generators **202D** in the category managers **202**. In an alternate embodiment, additional sprite generators may be provided by the animation engine **204**, such as an animated sprite generator for successively displaying a sequence of images to simulate a motion. The source of information to be displayed is either a static image, in the case of the static sprite generator, or information items in a specified information category. For instance, the parameter "NextIIL" in an actor definition indicates that the information to be displayed in the corresponding sprite is the next headline in the information category corresponding to the specified sprite generator for the actor. In another example, the parameter "NextAd" in an actor definition indicates that the information to be displayed in the corresponding sprite is the next advertisement image for the information category corresponding to the specified sprite generator for the actor.

The second stage of defining a sprite is to define its position and size at one second intervals, for 30 seconds in the preferred embodiment. The position of the sprite for a particular time can be defined by either typing in an X,Y, or by selecting a box representing the sprite with the user interface and then moving it to a position on a simulated display screen **236**. The size specification for the sprite at each time is a percentage of the sprite's nominal size (e.g., "size=120" indicates the sprite is to be displayed at 120% of its nominal size). The full definition for a sprite includes thirty X,Y,size tuples for a thirty second screen saver display period. In a typical display script, nor more than one

advertisement, three news items and two static images are used because the resulting display will be excessively busy, although the display script definition procedure allows a virtually unlimited number of sprites to be specified.

The data structure 237 representing each display script is shown in FIG. 7A: a header specifying the script's name, the number of actors defined in the script, an optional Wallpaper definition, and a list of all static images referenced by the script; plus a set of Actor definition arrays.

The screen save procedures interpret each display script and generate an animated display for 30 seconds based on the script. During display, the image corresponding to each actor is moved and sized in a virtually continuous manner, where the position and size of each sprite is linearly interpolated between the instantaneous position and size specifications for each second. During the display definition process, the sequence X,Y,size parameters for a currently selected actor can be smoothed, to produce more fluid movement and size changes of the actor by selecting the "smooth path" command in the Actor menu.

Referring to FIGS. 7A and 7B, the person preparing a display script using the display script definition dialog 234 can see the movement and sizing of the actors in the simulated display screen 236 by selecting the simulate command in the File menu, which cause the boxes in the simulated display screen 236 to move and be sized in accordance with the sequence of X,Y,size parameters for each specified actor.

While in the preferred embodiment advertisements are always simultaneously displayed with news items, in other embodiments advertisements and news items could be displayed sequentially. Computer programmers of ordinary skill in the art could modify the script definition dialog of the preferred embodiment, as described above, to define display scripts with sequential display of advertisements and news items.

Screen Saver Procedures

In the preferred embodiment, the screen saver procedures for displaying news items and advertisements are invoked using the same types of criteria as are used by other types of screen saver procedures. Generally, whenever the system detects a lack of user inputs via either keyboard or pointer device (e.g., a mouse or trackball) for a user configurable or otherwise specified length of time (e.g., 5 minutes), the screen saver procedures of the present invention begin the display of news items and advertisements from the local information database. In the preferred embodiment, the screen saver procedures display news items and advertisements for a sequence of information categories in a sequence of 30 second time slots.

More specifically, under the control of the screen saver procedures, news stories and an advertisement assigned to a first information category are displayed using a first display script for 30 seconds, then news stories and an advertisement assigned to a second information category are displayed using a second display script for the next 30 seconds, and so on until news stories and an advertisement have been displayed in all the information categories indicated in the subscriber's user profile 194 as being of interest to the subscriber, at which point the process repeats with the first information category.

Referring to FIG. 8, news stories, advertisements and display scripts are stored in files or similar data structures which have assigned unique file names. Each news story (herein usually called a news item) is usually assigned to a single information category, although nothing in the system of the preferred embodiment would prevent a news story from being assigned to multiple information categories. Advertisements can be assigned to multiple information categories as can display scripts.

As shown in FIGS. 8 and 9, the advertisements assigned to each information category are organized, through the use of a set of data access tables 186, in a separate linked list so as to create a separate "queue" of advertisements for each information category. Similarly the news items and display scripts assigned to each information category are organized in separate linked lists so as to generate separate queues of news items and display scripts for each information category.

FIG. 8 includes an example of an advertisement (A001) assigned to two information categories (News and Sports). This advertisement is stored only once in the workstation's local hard disk, but is included in two of the linked lists of advertisements.

The basic procedure for determining what display script, advertisement and news stories to display during each 30 second time slot is shown in pseudocode form in Table 1.

TABLE 1

Pseudocode Representation of Screen Saver Procedure

```
Store, indication of last information category displayed, and for each
    category an indication of the last advertisement, news story and
    display script used.
Do Until Screen Saver Mode is exited:
    {
    Select next information category (SIC).
    Select next display script (SDS) from queue of display scripts and
        next advertisement (SA) from queue of advertisements for the
        selected information category.
    Inspect selected display script to determine NN, the number of news
        items to be displayed. Select the NN next news items (SNI)
        from queue of news items for the selected information category.
    Update User Profile to indicate the last selected information
        category, and to indicate for the selected information category,
        the selected display script, advertisement and last selected news
        story.
    Call Animation Engine (SDS, SA, SNI) to display for the next 30
        seconds the selected advertisement (SA) and news items (SNI)
        under the direction of the selected display script (SDS).
    Call Ad Display Statistics Generator to update displayed
        advertisement statistics to include the advertisement displayed
        during current screen saver display period.
    }
```

Each time the Screen Saver procedure 201 is invoked, it starts with the next information category after the last one to have been used, and starts with the next advertisement and news stories after the last ones used in that information category. The screen saver status information 219 indicating the last displayed information category and the last displayed advertisement and news items in each information category are stored in a portion of the user profile 194 not transmitted to the information server.

Execution of the Screen Saver procedure 201, like other screen savers, is terminated and the subscriber's computer's display is returned to whatever was being displayed before the Screen Saver was executed, upon detection of certain types of user input. In the preferred embodiment, the user can use the profiler to select one of at least two exit modes: in a first mode, the Screen Saver procedure is terminated by hitting any key on the subscriber computer's user interface keyboard or by moving the user interface's mouse or trackball; in a second mode, the Screen Saver procedure is terminated by hitting any key on the subscriber computer's

user interface keyboard, but movement of the mouse or trackball does not cause the Screen Saver procedure to terminate. Rather, in the second screen saver exit mode, the subscriber can use the mouse or trackball to point to any of the news items being displayed and upon clicking one of the mouse or trackball's buttons, the data viewer **208** is executed with the news item selected by the subscriber being displayed.

When using the second screen saver exit mode, if subscriber user clicks on an advertisement, the subscriber's computer is automatically connected to the an associated World Wide Web page on the Internet that provides additional information from the advertiser. This is accomplished by World Wide Web connection and viewer procedures **211** (see FIG. 2) stored on subscriber's computer. Each advertisement is stored on both the information server and subscriber computers as a C++ data structure that includes (A) an image data array, typically representing a "GIF" format image, as well as (B) a list of static images (such as corporate logos and legends), if any, incorporated into the advertisement, and (C) a Web site address that is used by the World Wide Web connection and viewer procedures **211** to connect the subscriber to the advertiser's specified Web page when the subscriber clicks on the image of the associated advertisement.

Data Viewer

Referring to FIG. **10**, the data viewer **208** is a program for viewing news items that the subscriber specifically wants to read. The data viewer **208** can be executed at the subscriber's explicit command, and as just described in the immediately preceding section of this document, the data viewer can also be launched from the screen saver when the subscriber indicates that he/she wants to read a news story shown in the screen saver display by "clicking" the subscriber's computer's mouse or trackball on that news story.

The news stories shown in the center section **248** of the data viewer's display is selected by first selecting an information category by clicking on any of the category buttons **250** on the left margin of the display, and a subcategory button **252**, if any, on the bottom margin of the display, and then clicking on the article advance backward and forward buttons **254** to scroll through the news items in the selected information category. When a news item has more than one photo image associated with it, the subscriber can click on the photo advance backward and forward buttons **256** to scroll through the photos.

Each news item displayed in the center section **248** of the data viewer's display includes both the primary and secondary portions of the news item, thereby providing the subscriber in most instances with access to a fuller version of the news item than was shown by the screen saver. In the case of very short news items, the entire news item may be contained in its primary component. Furthermore, in client computers with very limited hard disk space available for storing news items, as indicated by the user profile **194** for the client computer, the secondary component of news items may not be stored in the local information database in order to conserve disk space.

A portion of the data viewer screen is always occupied by an advertisement image **258**. The advertisement image shown is selected on the basis of the information category associated with the news item being viewed. In a preferred embodiment, the advertisement shown in the data viewer screen is changed (A) every time the subscriber clicks on a category button **250** so as to select a different information category than the one previously selected, and (B) every 30 seconds when subscriber continues to view news items in a single information category for more than 30 seconds. The advertisements are selected in rotating order among the advertisements assigned to each information category, as described above for the screen saver procedure.

When using the data viewer, if subscriber user clicks on the displayed advertisement, the subscriber's computer is automatically connected to the an associated World Wide Web page on the Internet that provides additional information from the advertiser.

The Options button **260** is used to invoke dialog procedures in which the subscriber specifies general preferences, such as how quickly data scrolls in the scrolling windows, and which mode of screen-saver termination the subscriber prefers.

Connecting the Subscriber's Computer to the Information Server

Referring to FIGS. **11** and **12**, the information server is preferably a set of computers interconnected by a local area network that each operate under a multi-tasking, multi-threading operating system such as Microsoft's Windows NT. The information server **104** has multiple "application servers" **272**, which are processes run on one or more computers. Each application server **272** preferably has multiple threads, each of which can service one connection with a client computer at any one time.

A primary concern with the architecture of the information server is that the information be able to handle a very large volume of connection requests from client computers. The information server may need to service thousands of connection requests per hour, and thus efficient handling of each connection request is important.

In a preferred embodiment, during each connection of a subscriber computer to the information server, the information server sends a "next recommended download time" to the subscriber computer along with the other information being downloaded onto the subscriber computer. The server computer selects the next recommended download times sent to the various subscriber computers so as to spread their connection requests fairly evenly over time. In an alternate embodiment, connection requests are spread over time by having the subscriber computers randomly select connection times within the general boundaries of a specified schedule of connections (e.g., a randomly selected time anywhere within a half hour, plus or minus, of each scheduled connection time).

When a client computer first initiates a connection to the information server, it sends a first message to the Internet address associated with a router process **270** in the information server. The router selects an application server **272** with at least one available thread and passes back to the client computer an Internet address associated with that application server.

The client computer then sends a portion of its user profile to the assigned application server. If an administrative update is being requested, the locally accumulated advertising display statistics **218** (see FIG. 4) are also sent to the application server.

Based on the time of day and the information in the transmitted user profile, the application server determines (A) what type of update is to be performed (i.e., a news item update or an administrative update), and (B) what new information needs to be downloaded to the client computer and what items in the client computer's local information

database should be deleted. The application server **272** then makes calls to one or more data servers **274** to collect all the information that needs to be sent to the client computer and then sends those items to the client computer, along with instructions on what items, if any, should be deleted from the client computer's local information database.

The client computer then loads the received information into its local database, and replaces software modules with received software modules, if any. It also deletes the items, if any, specified for deletion by the information server. Finally, it updates its data access tables **186** to incorporate all the changes to the information database so that the client computer is ready to display news items and advertisements in each information category.

A more detailed explanation of the local database update process is provided by a pseudocode representation of that process in Table 2.

In one preferred embodiment, when the "client" that is connected to the information server for an update is itself a local area network server, the client downloads all news items into its local database. In a second preferred embodiment, the client/LAN server generates a group profile that represents the union of all news category and subcategory preferences of the subscribers connected to the client computer, and news items are downloaded into the client's local database based on that union group profile. In either embodiment, the screen saver procedures filter out news items in the LAN server's local information database that are not consistent with each subscriber's user profile, thereby showing each subscriber only the subset of news items corresponding to the subscriber's user profile. In the preferred embodiments, the subscriber level news item filtering is accomplished by setting up the subscriber's data access tables **186** to include only news items corresponding to the subscriber's user profile. In the computers of stand alone subscribers, the filtering of news stories is handled during the data download process, by only downloading news items corresponding to the subscriber's user profile.

The subscriber level news item filtering function is also used to enable the information server to instruct the subscribers' computers to "black out" an advertisement, without deleting it from the local database. For example, a company may want to suspend its advertisements for a few days after a disaster involving the company. The black out function is achieved by simply removing the corresponding advertisement(s) from the advertisement queues in the data access tables. For this purpose, the information server and subscriber computers may temporarily define a "non-use" information category and a corresponding advertisement queue for keeping track of blacked out items.

TABLE 2

Pseudocode Representation of Database Update Procedure

```
Connect to Information Server
If Update Type=Administrative /* i.e., not a news story only update */
    {
    Client sends display statistics to server, and clears display statistics
      upon confirmation that server has successfully received them
    /* Pool Synchronization */
    Server Sends list of items (i.e., advertisement and scripts) that
      should be included in the client's advertisement and script pools
    Client deletes items in its advertisement and script pools that are not
      included in the list received from the Server
    Client determines what items are missing from its advertisement and
      script pools
```

TABLE 2-continued

Pseudocode Representation of Database Update Procedure

```
    Client sends requests to Server for advertisements and scripts
      determined to be missing from local pools
    Server sends requested items to Client
    Client stores received advertisements and scripts in their
    respective disk directories
    Client opens all advertisement and script files to determine the static
      images referenced by those files, but not included in the local
      static image pool.
    Client sends requests to Server for static images determined to be
      missing from local pool
    Server sends requested items to Client
    Client stores received static images in their assigned disk directory
    /* Software Module Synchronization */
    Client sends message indicate it is ready for software
      synchronization, including date and time of last
      administrative update
    Server sends new software modules, if any, based on date and time of
      last administrative update
    }
For each Category Manager (CMx)
    {
    /* CMx.Fetch Procedure: */
    Client (CMx.Fetch procedure) sends profile data for CMx to Server,
      including subcategory data and filter data, if any
    Server sends items consistent with profile data
    Client (CMx.Fetch procedure) stores received items in data structures
      and files for that category
    Client (CMx.Fetch procedure) deletes items, in FIFO order,
    for current category which (A) exceed data storage
      limit in data, (B) exceed item count limit,
      or (C) exceed specified age limit
      /* Item storage limits 221 for each category are defined in a por-
tion
          of the user profile 194 (see FIG. 4) . */
    }
Client updates data access tables
Return
```

Alternate Embodiments and Extensions

While the present invention has been described with reference to a few specific embodiments, the description is illustrative of the invention and is not to be construed as limiting the invention. Various modifications may occur to those skilled in the art without departing from the true spirit and scope of the invention as defined by the appended claims.

For instance, in an alternate embodiment of the present invention, the server's information database **134** also includes a client catalog which lists all subscribers authorized to receive news items and advertisements from the server, including a connection password that is checked whenever the subscriber's computer calls the information server for an update, and status information included the last time that each subscriber's computer received updated news items, advertisements, scripts, and software modules.

In another alternate embodiment, the information server broadcasts information updates to all the subscriber computers, for example by sending an e-mail message or a sequence of e-mail messages containing all news item, advertising, display script and software updates to all the computers of registered subscribers.

What is claimed is:

1. A computer-implemented method of displaying information on a computer having a local storage device and a display device, the computer being coupled to a network, the computer-implemented method comprising the steps of:

storing advertising information and news information downloaded from the network in the local storage

device of the computer, wherein each of the advertising information and the news information is associated with at least one category in a list of predefined categories, the list of predefined categories being based on user selected preferences;

detecting a predefined idleness criteria for the computer wherein the predefined idleness criteria is met when the computer fails to receive user input for a predetermined amount of time;

selecting a first set of advertising information and a corresponding first set of news information from a first category in the list of predefined categories; and

displaying the first set of advertising information and the first set of news information in a screen saver on the display device of the computer after a predetermined period of time.

2. The computer-implemented method as recited in claim 1 wherein the step of displaying includes the steps of displaying, with continuous movement on the display device, the first set of advertising information and the first set of news information in the screen saver on the display device of the computer after a predetermined period of time.

3. The computer-implemented method as recited in claim 2 wherein the step of displaying further includes the step of displaying, with continuous movement on the display device, an image together with said first set of advertising information and the first set of news information.

4. The computer-implemented method as recited in claim 3 wherein the image is an animated character.

5. The computer-implemented method as recited in claim 1 further including the steps of:

selecting a second set of advertising information and a corresponding second set of news information from a second category in the list of predefined categories;

removing the first set of advertisement information and the first set of news information; and

displaying the second set of advertisement information and the second set of news information in the screen saver on the display device of the computer after a predetermined period of time.

6. The computer-implemented method of claim 1 wherein the computer is coupled to an information server on the network, the computer-implemented method further comprising the step of periodically downloading updated advertising information and updated news information from the information server to the computer.

7. The computer-implemented method of claim 6 wherein the list of predefined categories is automatically updated based on changed information on the information server.

8. The computer-implemented method of claim 1 further comprising the steps of:

providing a plurality of display scripts in the computer; and

controlling with one of the display scripts the display of the advertising information and the news information in the categories selected by the user and the display of a background image.

9. The computer-implemented method of claim 8 additionally comprising the step of rotating the plurality of display scripts to control the display of the advertising information and news information in the categories selected by the user and the display of the background images.

10. The computer-implemented method as recited in claim 1 wherein the news information comprises a primary and a secondary component.

11. The computer-implemented method as recited in claim 10 wherein the step of displaying the first set of advertisement information and the first set of news information includes the step of displaying the first set of advertisement information and the primary component of each of the first set of news information in the screen saver on the display device of the computer after a predetermined period of time.

12. The computer-implemented method as recited in claim 11 wherein said secondary component is displayed only upon user request.

13. The computer-implemented method as recited in claim 11 wherein the step of displaying is interrupted when the computer detects any user input on an input device coupled to the computer.

14. The computer-implemented method as recited in claim 11 wherein the step of displaying is interrupted when the computer detects user selection of one of the displayed advertising information and the primary portion of news information in the screen saver.

15. The computer-implemented method as recited in claim 14 wherein if the advertising information is selected, the computer further automatically connects to a Web page on the network corresponding to the selected advertising information.

16. The computer-implemented method as recited in claim 14 wherein if the primary portion of the news information is selected, the computer further automatically displays the secondary portion of the news information.

17. The computer-implemented method as recited in claim 1 wherein the network is the Internet.

18. The computer-implemented method as recited in claim 1 wherein the network is the World Wide Web.

19. The computer-implemented method as recited in claim 1 wherein the computer is a personal computer (PC).

20. The computer-implemented method as recited in claim 1 wherein the computer is any computer that supports a screen saver mode of operation.

* * * * *